City of San José

Guadalupe River Trail Reach 6 Master Plan

Highway 280 to Willow Street

Master Plan

October 2004

The Planning Collaborative, Inc.

CSJ Milestone Code GUA17

City of San José

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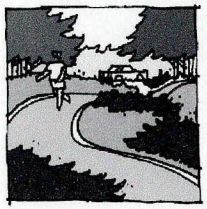


Executive Summary

The Trail

The trail project described by this master plan links the Guadalupe River Park near Highway 280 to the Highway 87 Bikeway near Willow Street[1]. This trail reach is one of several that make up the entire Guadalupe River Trail system. When all reaches are completed, the trail will be approximately 14 miles in length and will stretch from Lake Almaden Regional Park (confluence of Los Alamitos Creek and Guadalupe Creek in south San Jose) to the community of Alviso and the future San Francisco Bay Trail. This project proposes a multi-use trail that serves recreational and commuter needs. The trail corridor includes 1.15 miles of paved trail, a bridge over the Guadalupe River and a bridge over Willow Street.

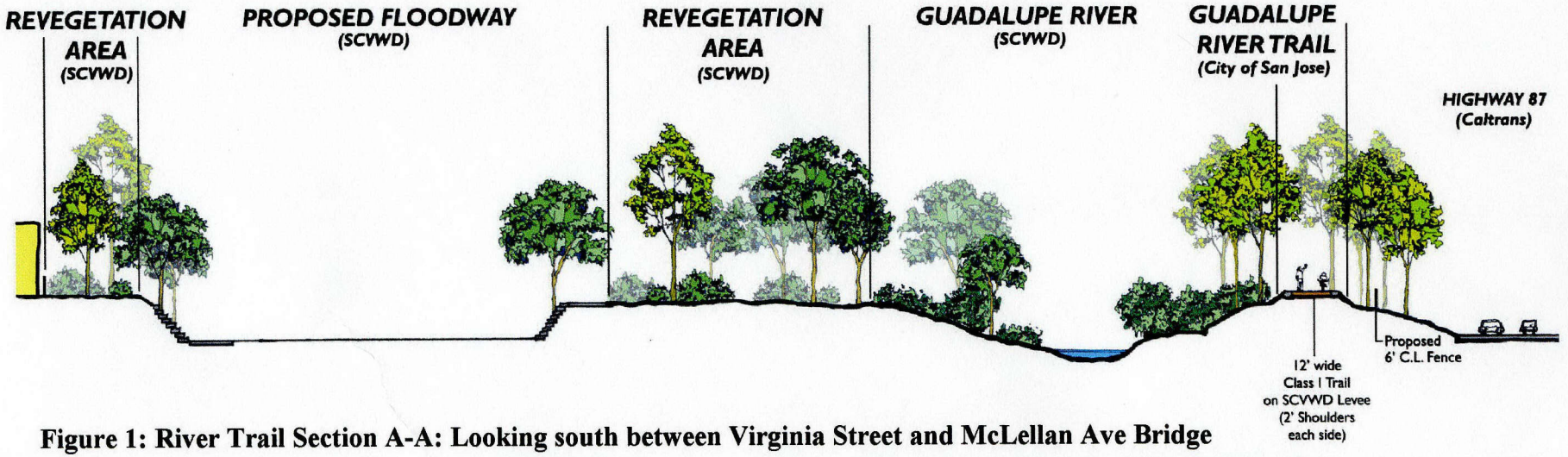


Figure 1: River Trail Section A-A: Looking south between Virginia Street and McLellan Ave Bridge

NOTE: I. Trail/SCVWD levee elevation to be determined by SCVWD.

[1] For project management purposes, this report designates the distance from Highway 280 to Willow Street as Reach 6. Technically, a very short segment, from the railway to Willow Street represents Reach 7. This designation is clearly documented in the City's Trail Inventory and does not compromise the planning effort documented herein.

ALIGNMENT

The trail will be aligned primarily along the Santa Clara Valley Water District (SCVWD) levee / maintenance road between the Guadalupe River and Highway 87. This alignment takes advantage of river and city views, with the benefit of minimizing conflicts with the Upper Guadalupe River Flood Control Project being planned by the U. S. Army Corps of Engineers and the SCVWD but not yet funded or scheduled.

The northern entrance to the trail connects to the existing Guadalupe River Park near Woz Way. In this area the trail will be integrated into the eastern edge of the existing Caltrans parking lot under Highway 280. At the south end of the parking lot the trail will either ramp over Floodwall "G" (planned by the U.S. Army Corps of Engineers), or pass through via a gate.

From Floodwall "G", the trail winds south under the Highway 280 and Highway 87 ramps and for a short distance, below the top of bank adjacent to the river. The trail will ramp over a flood training wall beneath the highways 87-280 connector ramp. The trail returns to the top of bank, with a trail head at Virginia Street. In the permanent trail (build-out condition) there will be both an at-grade crossing and an undercrossing at Virginia Street. The undercrossing will ramp beneath the Virginia Street bridge on the west side, adjacent to Highway 87 traffic. To the south, the trail resumes its top of bank alignment just north of the exiting railway, at this point, a bridge structure provides access to McLellan Avenue. This bridge will have two approximately-equal spans with a single column, center support located on an island of land separating the natural river and the man-made channel. On the east bank, the trail will pass through a ½ acre site of undeveloped SCVWD-owned land that is accessible from McLellan Avenue. Use for this land was not defined as part of this master plan.

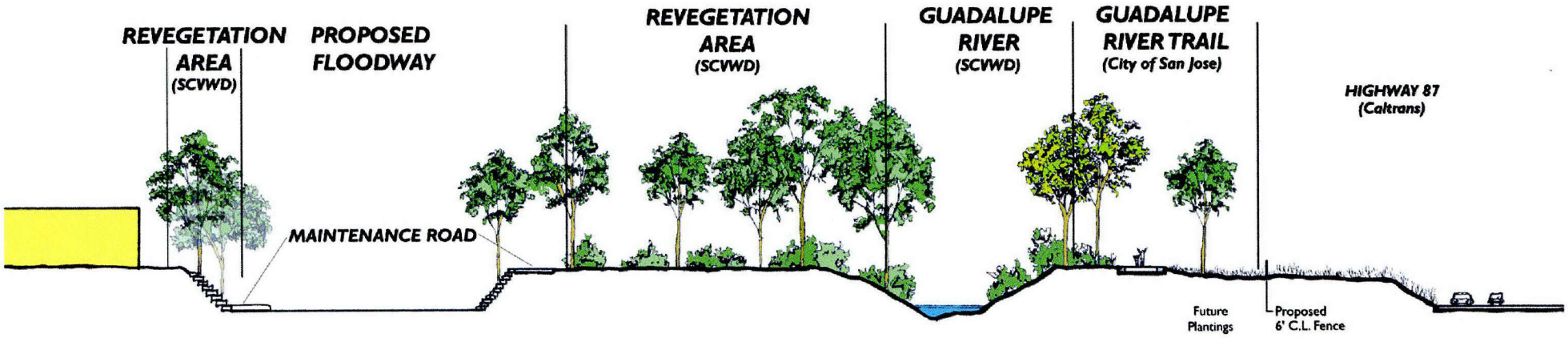


Figure 2: River Trail Section B-B: Looking South between Virginia Street and Grant Street

NOTE: 1. Trail/SCVWD levee elevation to be determined by SCVWD.

The trail follows the McLellan Avenue sidewalk to an abandoned segment of Willow Street, a staging area with parking for six to ten cars is proposed at this location. From there, the trail will proceed westward to a ramp system and associated Pedestrian/Bike Bridge over Willow Street. The new bridge will be a single span connecting the trail with the existing Highway 87 Bikeway.

PROJECT PHASING

Implementation of the trail is proposed to occur in two phases.

In the first phase, the permanent trail will be constructed from Woz Way to Virginia Street on the flood levee west of Guadalupe River and then proceed on an interim on-street trail from Virginia Street, continuing easterly to Harliss Avenue, southerly along Willow Street and northerly to the Highway 87 Bikeway. Improvements will include a paved trail, corridor landscaping, public art, gateway element at Virginia Street, and interpretive wayfinding and safety signage. Interim on-street trail alignments will be designated between Virginia Street and Willow Street. Wayfinding signage will direct users through the neighborhood until the final trail improvements can be constructed.

In the second phase, the remaining permanent trail will be constructed from Virginia Street with a bridge crossing the river and flood control channel, and a ramp and bridge across Willow Street. Improvements will include a paved trail, corridor landscaping, public art, additional gateway element at Virginia Street, underpass at Virginia Street, and interpretive wayfinding and safety signage.

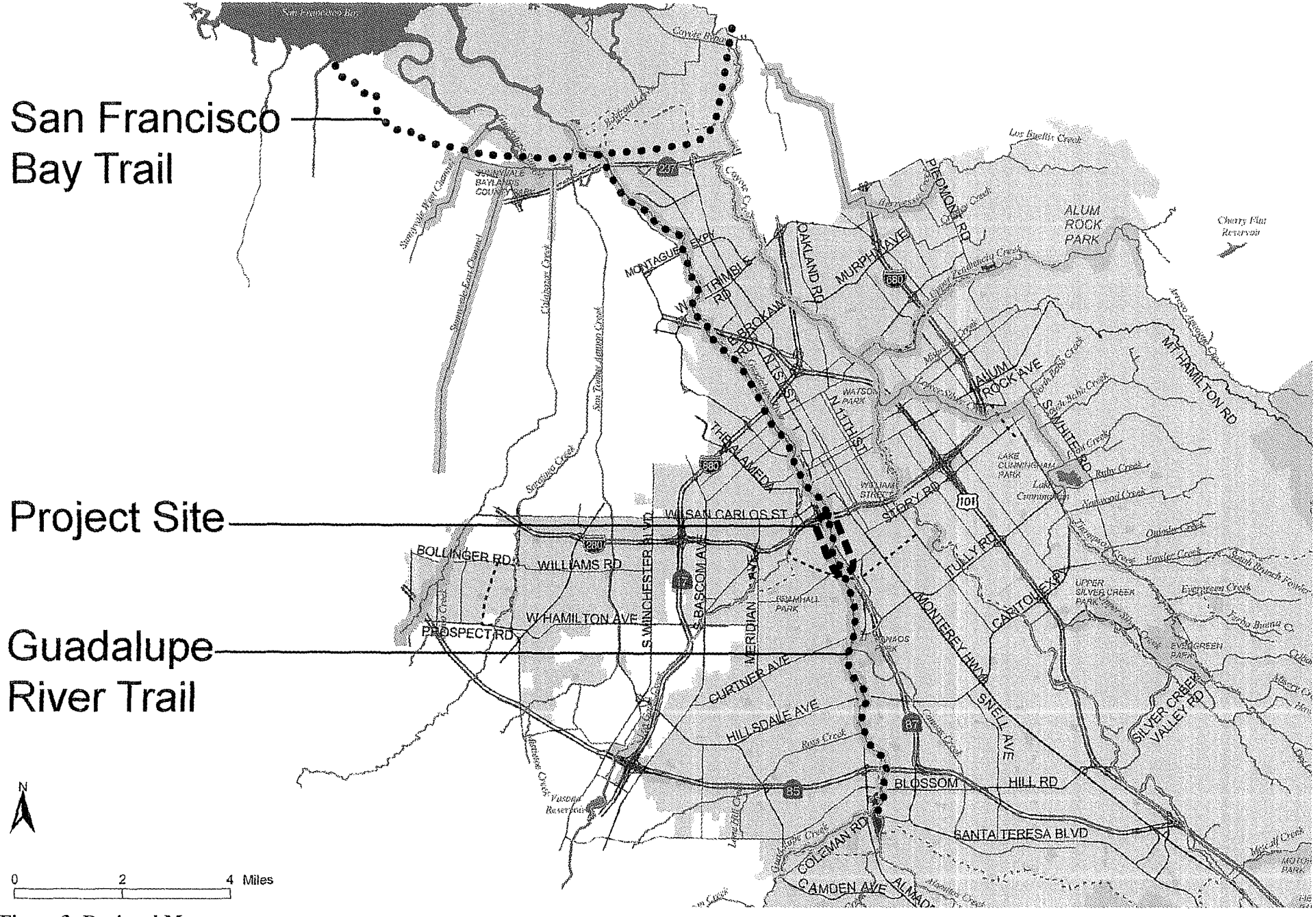


Figure 3: Regional Map

Chapter 1
Introduction

Project Background and Purpose

The City's General Plan Goal for trails states: "Provide a network of trails and pathways throughout the City in order to maximize the City's recreational opportunities and to provide alternate means of both commuting and reaching regional parks and other natural areas". Additional General Plan policies encourage trails along waterways and cooperative interagency development of trails. The Guadalupe River Trail project is intended to meet these goals and policies. The Parks General Obligation Bond Measure (passed in November of 2000 for improvements and renovation of City parks, recreation facilities, and trails) is currently identified as the primary source of funds for the project.

The scenic, recreational, and commute benefits, plus the increase in connectivity to existing and planned trails and bikeways, make Reach 6 a valuable trail project.

The trail is identified in many regional and local plans, including the following:

1. City of San José Guadalupe River South Corridor Master Plan, 1988
2. Santa Clara County Trails Master Plan Update, 1999
3. Association of Bay Area Governments Connector to the San Francisco Bay Trail Plan
4. City of San José Greenprint, a Strategic Plan For Long Term Trail, Park and Community Facility Development, September 2000

Project Area

The trail will be aligned primarily along the Santa Clara Valley Water District (SCVWD) levee / maintenance road between the west side of the Guadalupe River and the east side of Highway 87. This alignment takes advantage of river and city views, with the benefit of minimizing conflicts with the Upper Guadalupe River Flood Control Project being planned by the U. S. Army Corps of Engineers and the SCVWD.

The trail runs north and south along the west bank of the Guadalupe River before crossing to the east side at McLellan Avenue and extending over to the south side of Willow Street. Land uses along the trail corridor include residential to the east and south, Highway 87 to the west, and cultural and residential in the Downtown to the north. Commercial uses exist near the trail along the Willow Street corridor.

The Ohlone Indians inhabited the San Francisco Bay Region from the Golden Gate south to Monterey, including settlements along the Guadalupe River. According to Dr. Robert Cartier, Archeologist, "It is believed that the Ohlone Indians inhabited the area since A.D. 500, and that the speakers of the Hokan language previously inhabited at least part of the region. However, it is unclear when the Hokan or even earlier Paleo-Indians first came to the area."[1] The Guadalupe River was named by the De Anza Expedition in 1776, who noted that the area was well supplied with timber and agricultural land, and that it appeared to be suitable for a large settlement. In 1777, both the Pueblo de San José (on the Guadalupe River) and Mission Santa Clara (located two miles away) were founded. During the Mexican Period, the Pueblo was the site of a public market, horse races, and bull and bear fights. Other historical references noted by local residents attending the project's community meetings included "Goosetown", an area of Italian immigrants who raised geese, and the Spanish Revival architecture of the Sacred Heart Church. (See Appendix, Guadalupe River History).

[1] *Cultural Resources Evaluation for the Guadalupe River Trail Reach Six Project in the City of San Jose*, Archeological Resource Management. May, 2004

Master Plan Overview

This trail offers a variety of trail experiences as it provides a transition between the Downtown, neighborhoods, and the natural environment. Project elements include two bridges, corridor landscaping, riparian re-vegetation and mitigation, rest areas, river overlooks, staging area parking, interpretive displays, trail entrance gateways, safety/signage striping and guide signs. Public art will also be included as the City requires that 2% of project funds over $100,000 be allocated for this purpose.

Phase I Includes:

1. Paved trail from 280 to Virginia Street
2. Gateway elements at Virginia Street (North side trailhead as part of Phase 1)
3. Public Art
4. Interpretive Signage
5. Way Finding Signage (along interim, on-street segment)
6. Guide Signs (Rules, nearby points of interest; historical, cultural and trail-supporting commercial)
7. Safety Signage/Striping
8. Corridor landscaping
9. Offsite Mitigation

Phase II Includes:

1. Paved trail from Virginia Street to Willow Street
2. Under Crossing at Virginia Street
3. Pedestrian/Bicycle Bridges over Willow Street and the Guadalupe River/Flood Channel
4. Staging Area
5. River Overlooks
6. Public Art
7. Interpretive Signage
8. Way Finding Signage
9. Guide Signs (Rules, nearby points of interest; historical, cultural and trail-supporting commercial)
   Safety Signage/Striping
10. Corridor landscaping
11. Offsite Mitigation

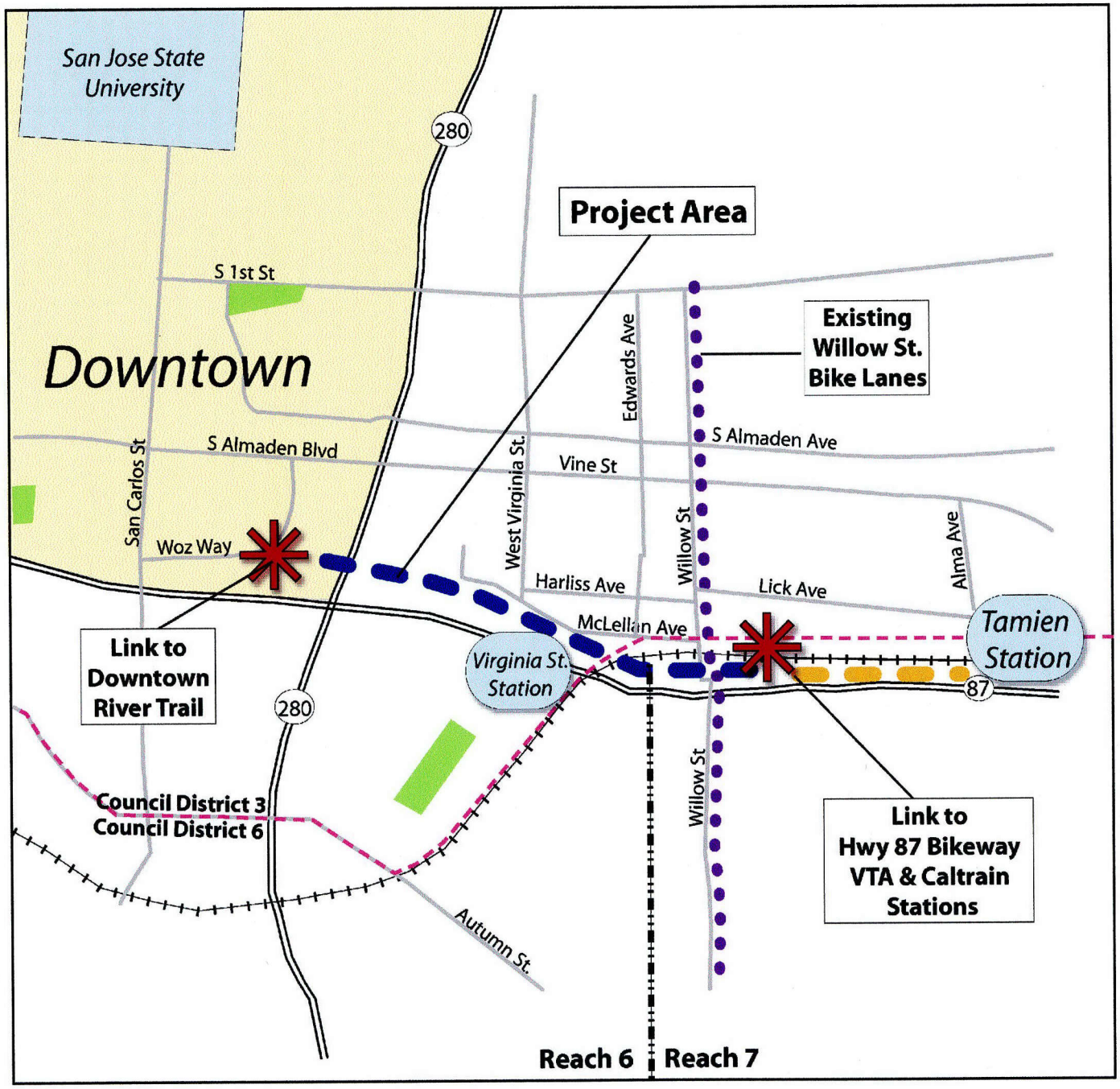


Figure 4: Project Area Map

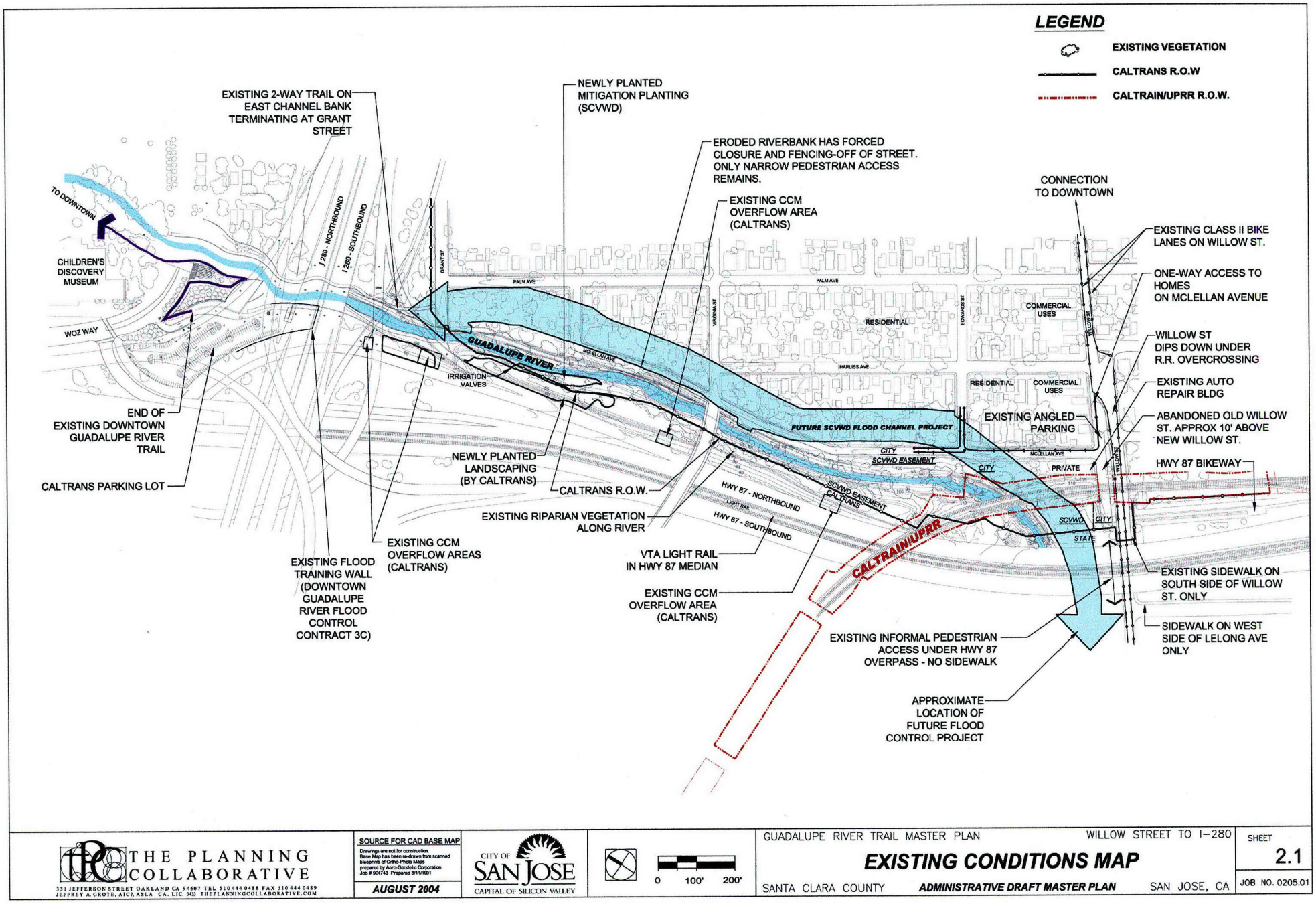


Figure 5: Existing Conditions Map

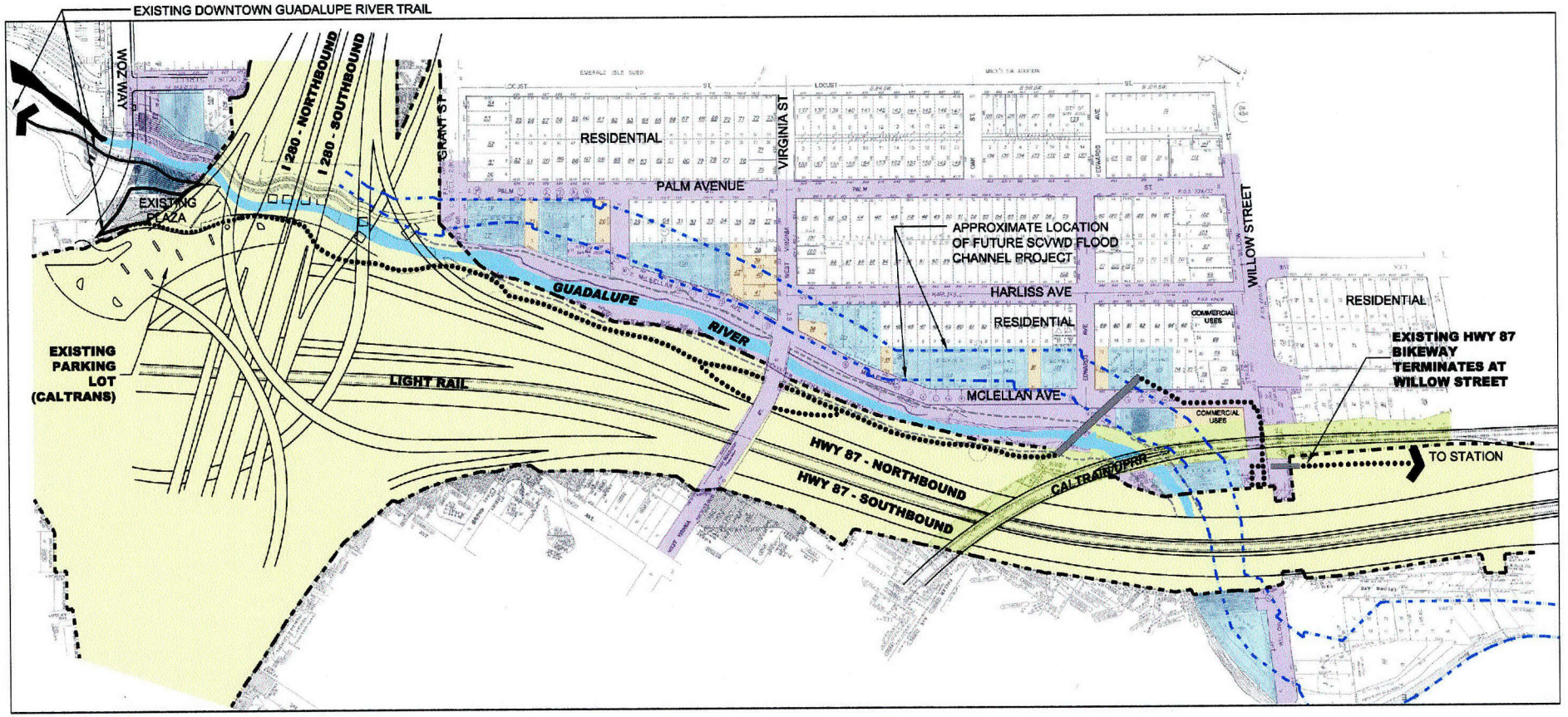
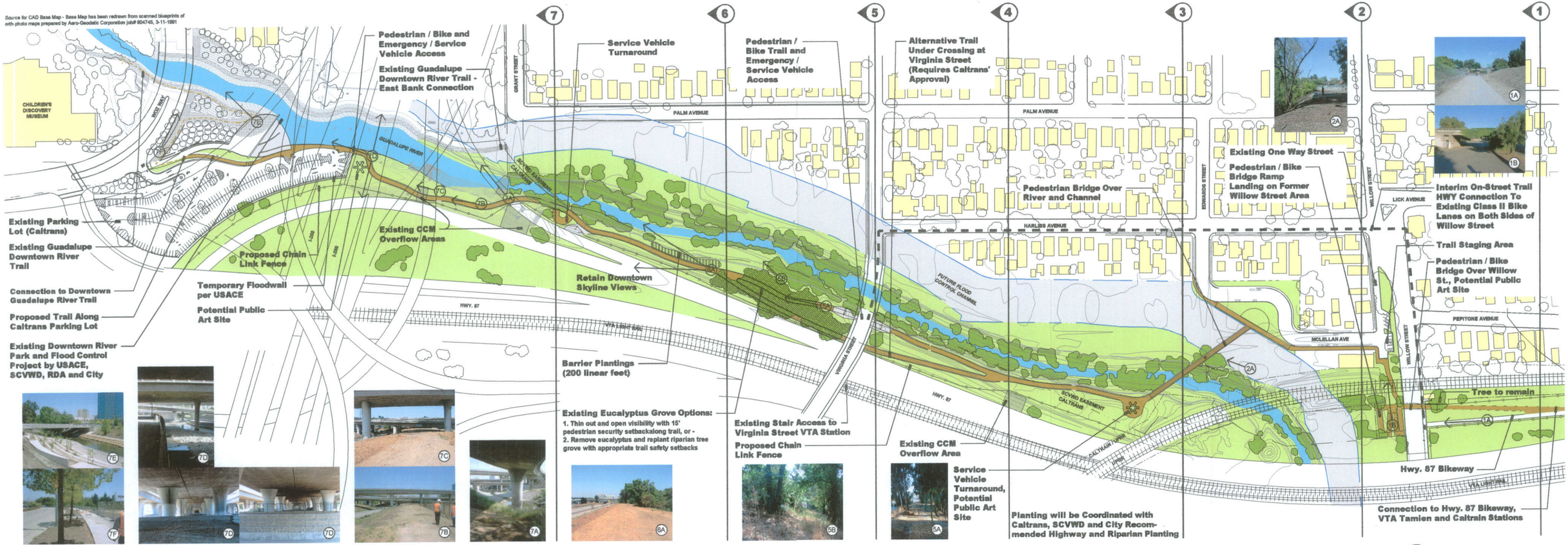


Figure 6: Property Ownership Map



GUADALUPE RIVER TRAIL REACH 6: MASTER PLAN

HWY. 280 TO WILLOW STREET - MASTER PLAN

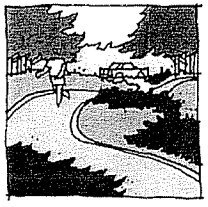
CITY OF SAN JOSE, SANTA CLARA COUNTY, CALIFORNIA

NORTH

0 25' 50' 100' 200'

THE PLANNING COLLABORATIVE
533 Jefferson Street Oakland CA 94607 T: 510-444-0488 F: 510-444-0489

Figure 7: Master Plan



Chapter 2
Master Plan Process

Introduction

The planning process involved collection of existing data (including property ownership, land use, traffic circulation, biotic, geotechnical, and archeological assessments) and an evaluation of the site and surrounding area to determine opportunities and constraints. The preparation of a Site Opportunities and Constraints Map (Figure 8) helped the design team analyze potential trail alignments and their relationship to future projects in the area, the environment, and linkages to existing trails and public use areas.

Inter-Agency Planning Coordination & Community Input

A **Technical Advisory Committee (TAC)** was established to address and resolve Master Plan design issues and to provide ongoing coordination during further design phases of the project. Five meetings were held. The agencies include:

- City of San Jose Departments
- Santa Clara Valley Water District (SCVWD)
- Caltrans
- Peninsula Corridor Joint Powers Board (JPB)
- Union Pacific Railroad (UPRR)
- U.S. Army Corps of Engineers (USACE)
- Valley Transportation Authority (VTA)

Caltrans provided conceptual acceptance of the Master Plan on March 30, 2004. Technical agreement with the Master Plan approach was also achieved with staff representatives of the SCVWD. Joint Use/Maintenance Agreements will be required for trail development on lands owned by Caltrans and SCVWD during the Design Development Phase.

Two **Community Meetings** were held to present concept trail plans, receive input, and reach a consensus on the preferred trail alignment.

Community Meeting #1

The first community meeting was held on August 27, 2003. Notices were distributed throughout the adjacent Washington Strong Neighborhoods Initiative Area and within 1000' of the project. The meeting, held at the Alma Senior Center, was attended by 22 community members and representatives from PRNS, DPW, Council District 3, SCVWD, and SJPD. Outcomes of this meeting in which strong support for the project was voiced include:

Input/Concern	Master Plan recommendation
Preferred All Weather Trail Along the West Side of Guadalupe River	West bank, paved trail from I-280 to the railway bridges. Short segment is along east bank as passage beyond the rails was not feasible.
Consider West Trail Alignment Under-crossing at Virginia Street	Development of an under-crossing adjacent to the freeway right of way will occur as part of Phase 2.
Avoid Impacts to Neighborhood Parking	Installation of 6 parking spaces near Willow Street to serve as a trailhead. Parking facilities exist beneath I-280 and at the Tamien LRT station.
Need for Directional Signage to New Parking at Trail Head	Signage plan will include directional information.
Enhance Willow Street as a Welcoming Gateway	Pedestrian/Bike over-crossing will include architectural elements to reinforce the area's Spanish Revival architecture and serve as a gateway to the Neighborhood Business District.
Identify Trail Access Points to Non-Drivers	Two gateways will be installed at Virginia Street to draw attention to the trail, but also serve as monument between the two neighborhoods. A gateway at the northern trailhead will be installed as part of Phase 1 of the project.
Include Mileage Markers for Destinations	Project will include mileage markers to support recreational users and assist emergency service personnel to locate points along the trail.
Provide 4-foot Shoulders Where Possible	Permitting agencies seek to minimize the impact of trail development on the natural environment. Design of the trail will seek to maximize trail width whenever possible, but a 4-foot shoulder does not appear likely at this time.

Community Meeting #2

The second community meeting was held at the Alma Senior Center on March 4, 2004, with 14 community members in attendance. Representatives from PRNS, DPW, Council District 3, and SCVWD also attended. Strong support for the plan was again expressed, and the following plan elements were highlighted:

Input/Concern	**Master Plan recommendation**
Lighting is Desired Under Virginia St. & Willow St. Bridge	Lighting will be included beneath the under-crossings.
Include Interpretive Displays About the Flood Control Channel and Guadalupe River.	Interpretive signage displays will be installed along the trail to explain the flood control and history of the river.
Include Historic References for Signage and/or Public Art Including "Goosetown", an area of Italian immigrants who raised geese; and the Spanish Revival Design of Sacred Heart Church	The pedestrian/bicycle bridge at Willow Street and the gateways at Virginia Street will include historical references, either in the form of story boards or physical design.
Consider Planned High-Density Residential Development Near Tamien LRT Station and Access to the Highway 87 Bikeway	The Tamien Park Master Plan will address connectivity between the LRT Station and future park and housing development.
Link Gardener and Washington Neighborhoods with "Gateway" Image	Two gateways will be installed at Virginia Street to draw attention to the trail, but also serve as monument between the two neighborhoods. A gateway at the northern trailhead will be installed as part of Phase 1 of the project.
Separate Commuter and Recreational Trail Users	The trail will be 12' wide with striped centerline and with posted trail rules.

Property Jurisdiction within the Project Area

One challenge of trail planning in an urban environment is the need to traverse properties that are owned or controlled by jurisdictions other than the City of San José. Jurisdictions within the proposed alignment are the Santa Clara Valley Water District (SCVWD) and the State of California (Caltrans). Joint Use and Maintenance Agreements, Cooperative Agreements, and Construction Permits will be required between these agencies and the City of San José to implement the project. The Peninsula Corridor Joint Powers Board (JPB/Caltrain) is within the planning area, but the trail alignment is outside of its right of way.

The trail master plan project and design process recognizes the inter-jurisdictional nature of this trail project. The City will work with these entities to implement the final trail alignment through agreements, permits, and other methods of approval.

Future Flood Protection Project

The U.S. Army Corps of Engineers and Santa Clara Valley Water District are planning the Upper Guadalupe River Flood Control Project (from Highway 280 to Blossom Hill Road) to provide flood control protection to the surrounding areas. This project will include the construction of a bypass, channels, levee widening and raising, and habitat restoration and mitigation measures. In addition, the Downtown Guadalupe River Flood Control Project is being completed downstream of Highway 280, and these improvements will provide 100-year flood protection for the downtown area. The trail plan anticipates these improvements but is only dependent upon the Flood Control improvement schedule where the permanent trail is to be constructed from Virginia St to Willow St.

The following objectives integrate the Master Plan with the SCVWD's Upper Guadalupe River Reach 6 Flood Control Project:

1. Integrate the trail with the future maintenance road/levee planned by SCVWD (predominantly along the west side of the river)

2. Coordinate trail alignment with maintenance road access points, vehicle turn-arounds and required clearances

3. Avoid impacts to the existing elevations of overflow facilities constructed by Caltrans along the river

4. Coordinate construction of the proposed Pedestrian/Bicycle Bridge over the river/Flood Control Channel.

5. Integrate trail with the U.S. Army Corp of Engineers Contract 3C, Phase 3 Project (I-280 to Grant Street)

Future Railroad Project

The Peninsula Corridor Joint Powers Board (JPB) owns and administers two railroad right-of-ways in the project area (adjacent to the proposed trail near Willow Street). Facility maintenance is by two entities: one track line with the concrete trestle structure is owned and maintained by Amtrak: the other trackage, with the wooden trestle, is owned and maintained by Union Pacific Railroad (UPRR).

The purpose of the JPB is to run and administer commuter rail service from San Francisco to Gilroy within the Counties of San Francisco, San Mateo and Santa Clara. Permit policy and procedures for coordination of any trail project activities which may occur within the right-of-way will be with both the JPB and UPRR. However, neither the permanent trail nor the pedestrian/bicycle bridge is planned to encroach in existing or future right-of-way.

Replacement of the wooden trestle and addition of two more track lines are being planned by Joint Powers Board and Union Pacific Railroad within the project area. However, funding is not available nor has a project schedule been determined..

Construction of a temporary track alignment will conflict with permanent trail design elements, such as the Willow Street Bridge and trail placements, will be required to continue railroad operation during construction of the SCVWD flood control project.

Flood and Railroad Projects: Trail Phasing Implications

For the future permanent trail phase connecting to Willow Street, a permanent trail can be planned and constructed without conflicting with a future track line expansion. However:

Scheduling of permanent improvements from Virginia to Willow is dependent on the completion of the SCVWD project as well as the restoration of the permanent railroad alignment. As funding for trail construction becomes available, City Staff will need to monitor and coordinate with the SCVWD and the JPB.

Geotechnical Review

Existing geotechnical data provided by the SCVWD was reviewed, on-site reconnaissance conducted, and preliminary recommendations made regarding geotechnical issues for proposed bridges at Willow Street and McLellan Avenue. The detailed findings are described in a separate report [1].

Based on the preliminary geotechnical study, construction is feasible for both proposed pedestrian/bicycle bridges.. The most suitable foundation system for support of the proposed bridges is a deep foundation system consisting of driven piles extending into underlying *very stiff* to *hard clayey* soils. The subsurface conditions below each structure should be determined by performing field exploration to develop pile design criteria. As stated in the report, "Based on the results of previous field exploration programs and the clayey nature of the subsurface soils, liquefaction during earthquakes is unlikely"[2]. Alternatives to driven pile foundations, such as cast-in place concrete piers, may be studied further.

Agency Roles and Requirements

In addition to the City of San José's role as lead agency in project planning, design and construction, and processing project environmental clearances, several agencies have institutional roles and regulatory requirements as summarized below:

1. The Santa Clara Valley Water District (SCVWD) manages watercourse right-of-ways within the County for purposes of watershed stewardship, flood control, water quality protection, water supply distribution, and maintenance. In addition to commenting on the Initial Study, the SCVWD will require Encroachment and Construction Permits and a Joint Use/Maintenance Agreement prior to construction.

2. Caltrans has participated in and has provided conceptual acceptance of the Master Plan. For the portions of the trail within their right-of-way, Caltrans will require a Cooperative Agreement, a combined Project Study Report/Project Report, Construction Permits, and review by Division of Structures as it relates to trail alignments near columns and under Caltrans over-head facilities.

[1] Preliminary Geotechnical Study, Guadalupe River Trail, Reach 6, AGS, June 2004, see Appendix C, Preliminary Geotechnical Study, Initial Study/Mitigated Negative Declaration for the Guadalupe River Trail Master Plan Project Reach 6 Willow Street to I-280.

[2] No site-specific subsurface investigations were performed for this study. The conclusions should be further verified and refined based on the site-specific geotechnical data to be obtained in the final geotechnical studies.

3. The California Department of Fish and Game (CDFG) reviews and must be notified of any activity that impacts riparian corridors and wetlands. CDFG will investigate the project's impact on any on-site wildlife resources. CDFG will comment on the Initial Study and the City will need to obtain a Streambed Alteration Permit for work in the river channel, such as drainage outfalls and where the trail is below top of river bank to pass under the Hwy 87 offramp to I-280.

4. U.S. Army Corps of Engineers (USACE) must be notified of any activity within the river channel. A nationwide permit will be required from the USACE for the two to three drainage outfalls at the river (see Plan Notes, Figures 17, 19, 20, and 22).

5. Regional Water Quality Control Board (RWQCB) requires a General Permit before construction of any project whose storm-water runoff would disturb one or more acres of land. The RWQCB will also issue the Water Quality Certification Permit for the drainage outfalls.

6. The Peninsula Corridor Joint Powers Board (JPB) owns and manages the two railroad right-of-ways and has participated in the formulation of the Project Master Plan, and would issue Encroachment Permits in their right-of-way if future changes in the proposed master plan require encroachments into their right-of-way. Amtrak and the UPRR, who are under contract to the JPB for line maintenance, are represented by the JPB.

Trail Linkage Opportunities

Linkages to other modes of transportation were a key consideration in project planning. Improved access to the area's Light Rail Transit (LRT) stations may encourage the public to use public transportation and bicycles. The trail will be accessible from three rail transportation stations:

1. A Caltrain station is one-half mile to the south of Willow Street.

2. The Tamien LRT station, located within the Highway 87 central median, is just under one-half mile south of Willow Street and highly accessible to the trail corridor. Since Willow Street dips under the Union Pacific Railroad over-crossing and Highway 87, resulting in 10' to 15' embankments on either side of the roadway, this creates an opportunity for a pedestrian/bicycle over-crossing, connecting to the existing Highway 87 Bikeway on the south side of Willow Street.

3. The Virginia Street LRT station is approximately 350 feet west of the trail alignment and is located within the Highway 87 central median.

Trail Plan Alignment Alternative Evaluation & Selection

Two permanent trail alignments were evaluated. Consideration was given to use of a maintenance road along the east bank of the Santa Clara Valley Water District's future flood control channel. Trail implementation in this location would have been dependent on the flood control project's long range schedule for funding and implementation. Also, this in-channel trail alignment is estimated to be inundated by storm events every two years, which will reduce commuter and recreational trail usage and add significantly to long term maintenance costs. Confined to the unshaded bottom of the flood channel, trail user experience is expected to be marginal..

The proposed trail alignment along the west bank of the Guadalupe River was selected as the preferred alternative because a majority of the trail will be above the 100 year flood level and it allows for early implementation of permanent trail improvements (from Woz Way to Virginia Street) before the flood control project is built east of the river. Additionally, the alignment takes advantage of the unique environment beneath the freeway interchange along the river and offers views of Downtown San José.

For the trail section from Virginia Street to Willow Street, due to existing railways, the trail must cross the river/flood channel via a pedestrian/bicycle bridge at McClellan Avenue near Willow Street. As a result, a portion of the trail must be on the east bank and dependent on flood control improvements before moving forward.

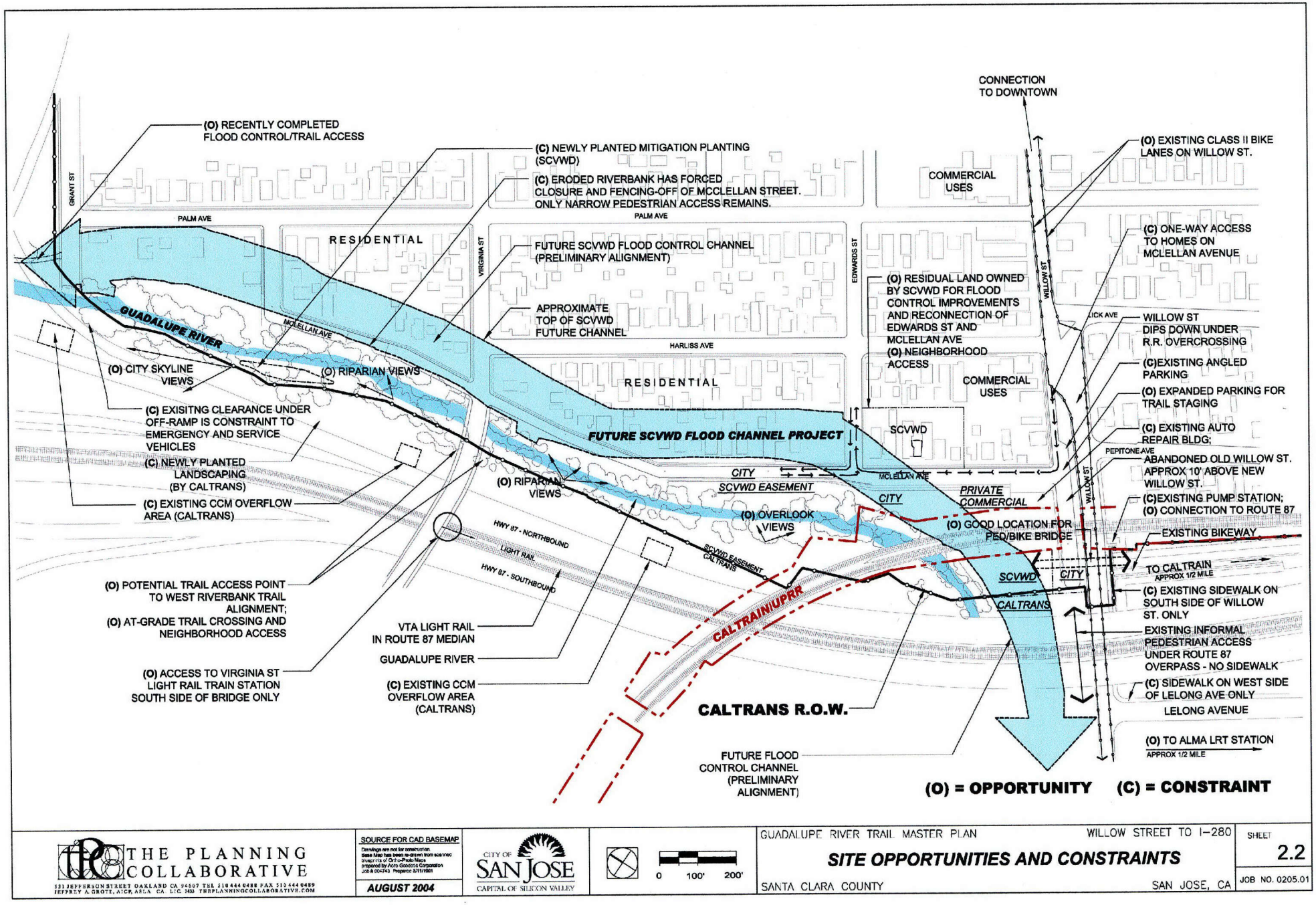


Figure 8: Site Opportunities and Constraints

Chapter 3
Trail Master Plan

Technical Design Issues

A number of complex technical trail design issues have been addressed in the preparation of the Master Plan.

TRAIL ALIGNMENT, LENGTH AND WIDTH

The trail alignment will be integrated with the proposed SCVWD maintenance road/levee. The proposed design includes gentle curves and attractive views of the riparian corridor, downtown, and adjacent neighborhoods. In conformance with guidance from County of Santa Clara's Uniform Inter-jurisdictional Trail Design, Use, and Management Guidelines, Caltrans staff and the City's Trail Program Manager, the trail will be 12 feet wide with 2 ft. shoulders on both sides. From the trail's connection to the downtown Guadalupe River Trail at Woz Way near Highway 280, to its tie-in at the Hwy 87 Bikeway at Willow Street, the trail will include a total of 1.15 miles of paved trail and bridge crossings.

TRAIL ELEVATION IN RELATIONSHIP TO FLOOD CONTROL

The final flood control project envisions a system of flood walls and levees with heights generally higher than existing grades along the trail corridor to contain a 100-year flood event[1]. In the interim, flood "training walls" (integrated with existing overflow facilities) will be installed to provide temporary flood protection by guiding floodwaters flowing along Highway 87 back into the river to protect homes and businesses to the north[2]. Once all ultimate flood protection improvements are implemented, these "training walls" will be modified or removed. Existing overflow facilities in this area will be retained and integrated with the trail.

The permanent trail section from Woz Way to Virginia Street has been planned to accommodate both interim and ultimate flood protection improvements:

[1] A 100-year flood event is of such magnitude, that it is, on average, anticipated to occur only once per century.

[2] The general purpose of the Phase 3 project is to divert "out of bank north moving flood waters back to the main channel of the Guadalupe River. This will protect areas north of Interstate 280 without inducing flooding." Guadalupe River Project Contract 3C Phase 3 Floodwall, City of San Jose, Santa Clara County, CA, Sacramento District, USACE.

1. **From Woz Way to approximately 800' north of Virginia Street**


The "Maze" at I-280/87

The permanent trail is compatible with the interim training walls and the ultimate flood control improvements. For the latter, permanent flood control structures will probably be located at the highest point along the top of bank. Because the trail must pass beneath two freeway off-ramps, one to the west, the I-280 Grant Street off-ramp, and one to the east, the Highway 87 to I-280 off-ramp, the trail design does not incorporate flood control improvements. In one location, where the trail traverses west to east, the design of the permanent trail may pass over or through the planned flood structure.

In the interim flood control program, in the vicinity of the I-280/87 "maze", the training walls form a broad spillway through this area of the trail. The trail will be subject to flooding by the 100-year event. In the area south of the Highway 87 off-ramp, the trail alignment will be below the top of bank, where it passes beneath the second off-ramp. At this point the trail is south of the spillway, but will be easterly of the permanent flood control improvements and will be subject to periodic flood events[3].

2. **From approximately 800' north of Virginia Street southward**

For the trail section planned southward, from approximately 800' north of Virginia Street, the trail will generally be built upon the existing levee/maintenance road, forming the permanent flood structure in this section[4]. Final elevations of the trail/levee will be determined by the SCVWD based on hydraulic requirements of the future flood control channel.

[3] Depending upon the design clearance, see Vertical Clearance Design Issues.

[4] A flood spillway will be necessary during the interim operation of the trail that will be raised to the final levee elevation for the permanent trail.

VERTICAL CLEARANCE DESIGN ISSUES

Several design issues require resolution in the design development phase; particularly related to underpass structures. A balance needs to be struck between preferred clearance heights and feasible project clearances. The minimum vertical clearance preferred by the Water District for maintenance vehicle passage is 13'-6"under these facilities, however, under certain conditions lesser clearances are permissible. The San Jose Mounted Police Patrol prefers 14 ft. clearances. The current design utilizes a 14 ft. vertical clearance where the trail passes under the northbound Highway 87 off-ramp to southbound Highway 280. However, lowering the trail to achieve a 14 ft. vertical clearance will consequently result in flooding of the trail by storms of less than ten-year return periods. Reducing the vertical clearance to 13 ft. or even 12 ft. greatly reduces inundation frequency. Final project vertical clearances will be determined with the cooperation of the Technical Advisory Committee (TAC) during design development.

PUBLIC ART OPPORTUNITIES

Future detailed plans will determine the precise location and program for public art within the trail corridor. Locations designated by this plan include the maintenance vehicle turnaround facility, the Willow Street Pedestrian/Bicycle Bridge, and a unique structural landscape under the Highway 280 "maze" (extending from Woz Way south through floodwall G to south of the "maze"). The City sets aside 2% of budgets over $100,000 for art improvements.

Gateways are planned for the north and south entry points at Virginia Street. These structures will follow a standard design template used elsewhere in the trail system, but may also present an opportunity for public art elements.

TRAIL SIGNAGE AND TRAFFIC CROSSINGS REQUIREMENTS

Trail signage and trail traffic crossings shall be per the Manual of Uniform Traffic Control Devices (MUTCD) and Caltrans standards pursuant to the requirements of the City of San José's Department of Transportation (DOT). DOT will study trail use and traffic safety when the trail is constructed and determine final traffic control measures along the public right-of-way.

"OLD" WILLOW STREET DESIGN & PEDESTRIAN / BICYCLE BRIDGE OPPORTUNITIES

The Old Willow Street[5] road bed, lying just north of Willow Street, can be utilized for the northern landing and ramps of the proposed Willow Street Pedestrian/Bike Bridge and a segment of the proposed trail corridor. This location allows for an excellent trail access point for trail users traveling in both directions.

PHASING OF BRIDGES

The construction of both bridges will be phased in after the completion of the Upper Guadalupe River Flood Control Channel project.

The construction of the bridge over Willow Street will be coordinated to avoid conflicts with the railroad project. An interim track alignment for continued railroad operation during construction of the flood control project may conflict with the location of this structure.

[5] With development of the Highway 87 project, a portion of Willow Street was realigned to travel beneath the freeway.

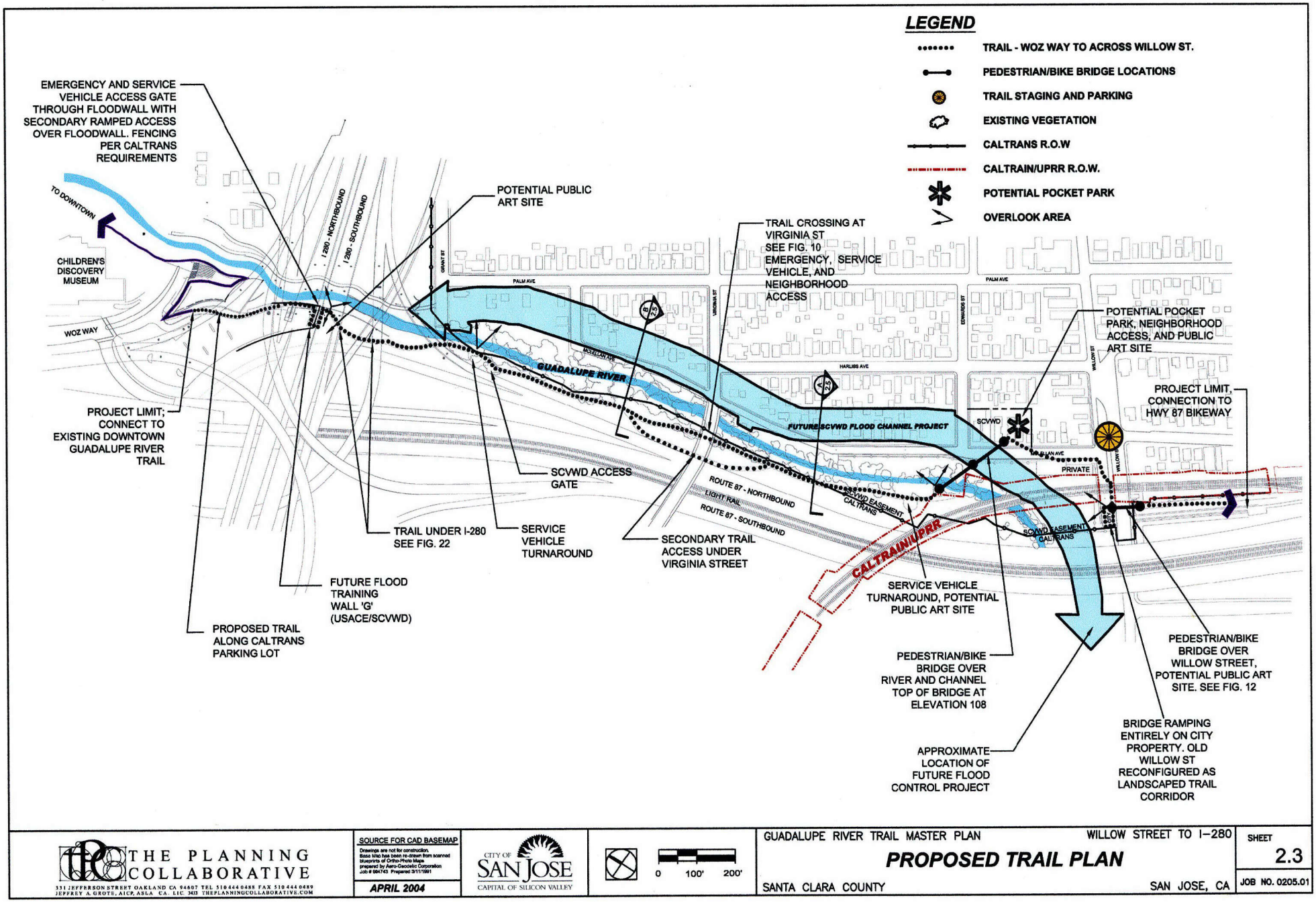


Figure 9: Proposed Trail Plan

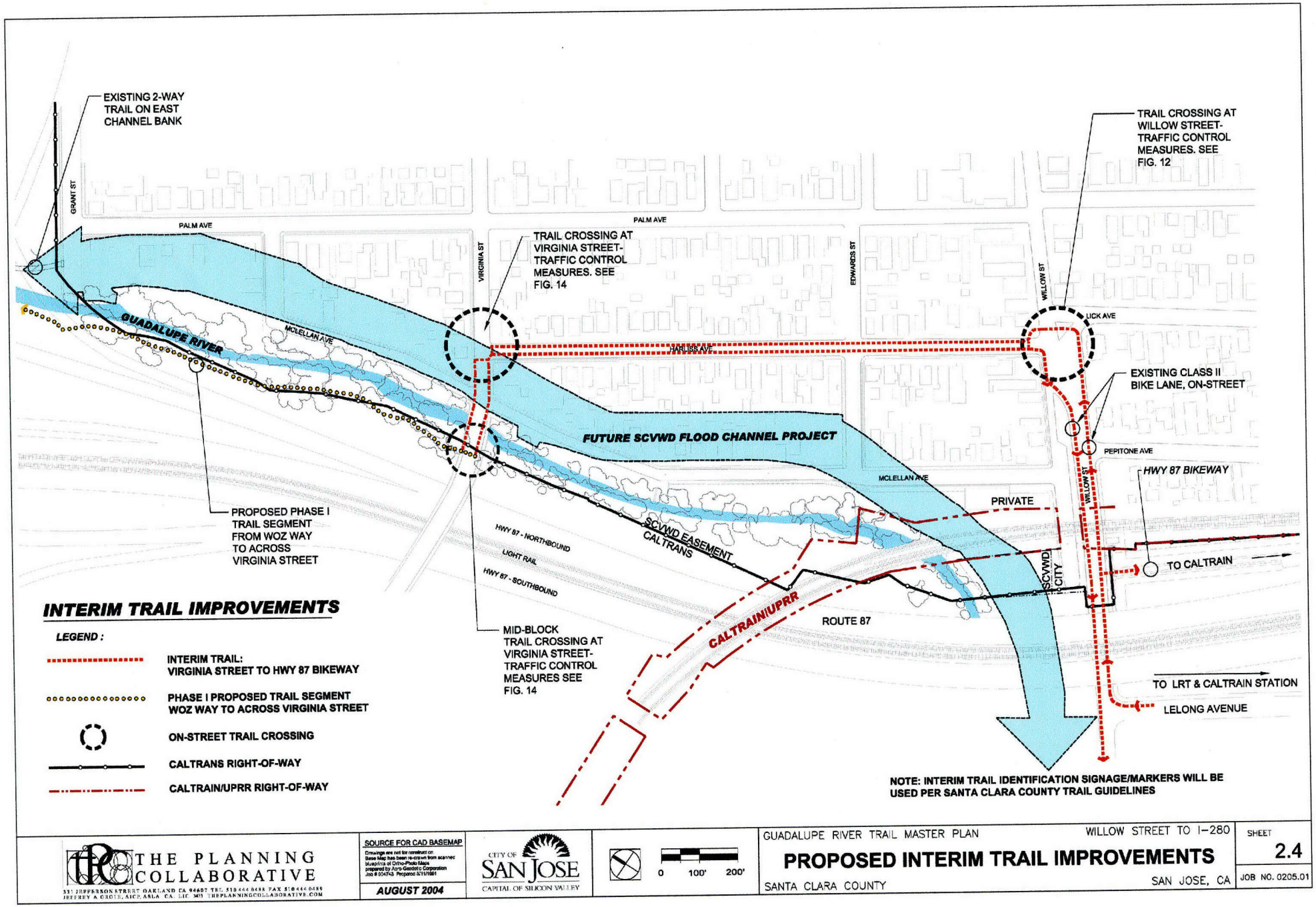


Figure 10: Proposed Interim Trail Improvements

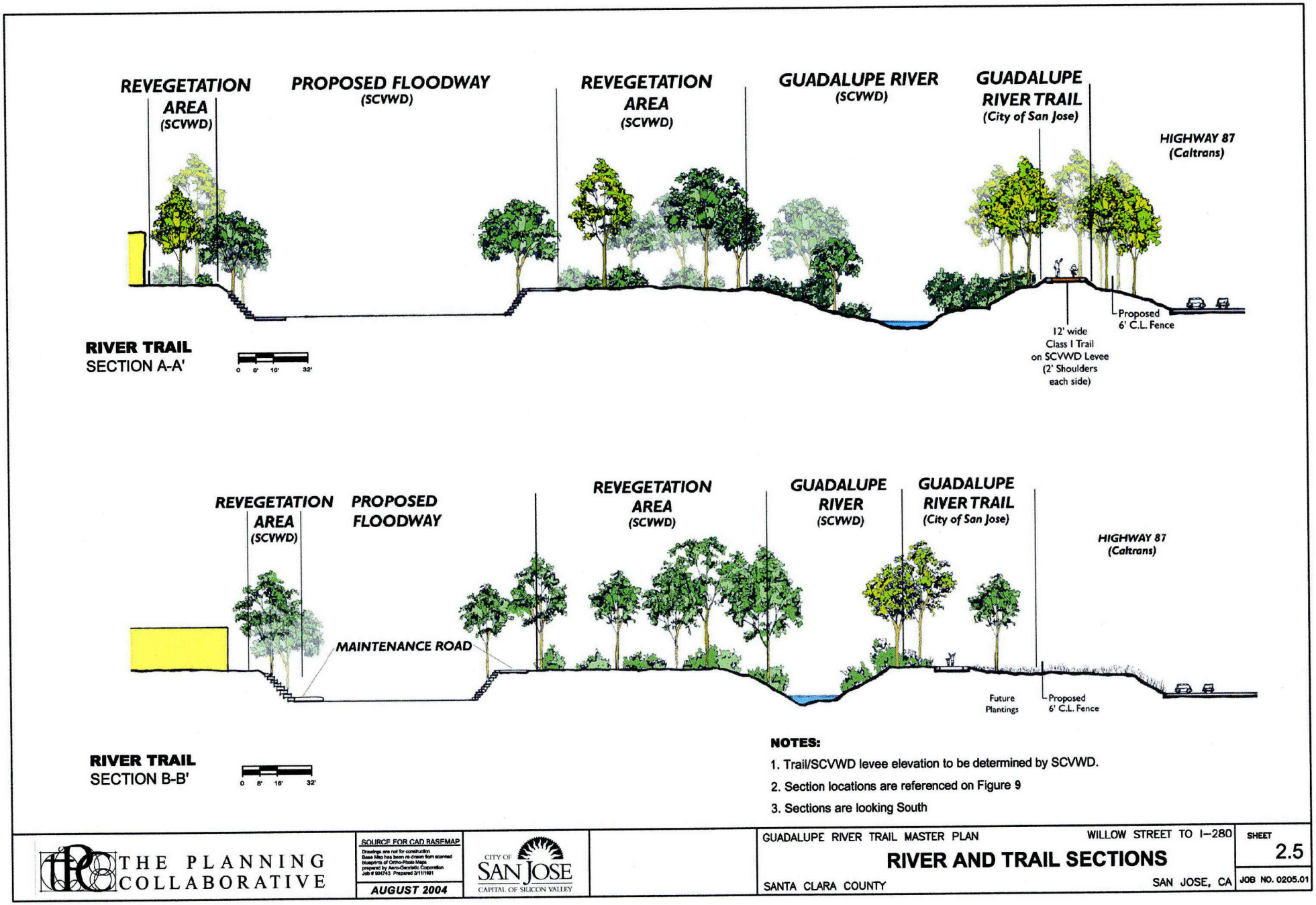
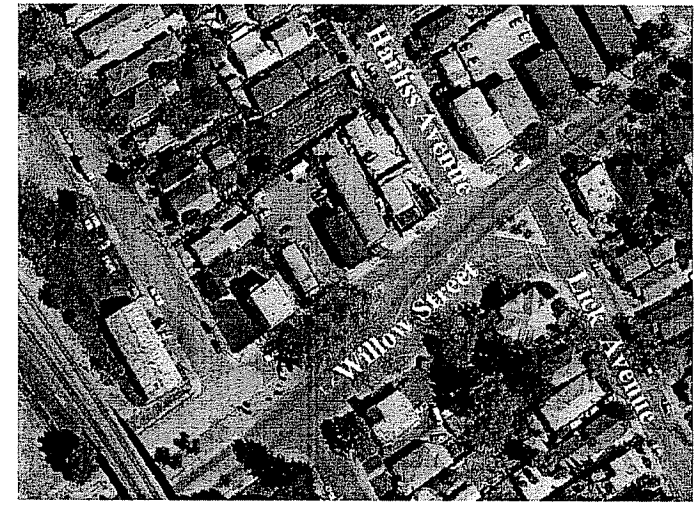


Figure 11: River and Trail Sections

WILLOW STREET / HARLISS AVENUE / LICK AVENUE INTERSECTION

Before the pedestrian / bike bridge can be built at Willow Street, trail users will use an interim on-street trail from Virginia Street to and along Harliss Avenue to Willow Street. A field review of the Willow Street/ Harliss Avenue/ Lick Avenue intersection by the project traffic engineer revealed the following:

- The posted speed limit on Willow Street is 25 mph.
- The observed speeds along Willow Street were approximately 25 to 30 mph.
- Willow Street is a 2-lane minor arterial roadway.
- Traffic on Willow Street appears to be low volume.
- A "sag" vertical curve exists on Willow Street west of the Lick Avenue intersection. The proposed crosswalk appears to have adequate sight distance for the observed speeds.
- According to the VTA bike stress level criteria, a low to medium stress level street has posted speeds below 35 mph and has curb lane with 22 feet widths. Willow Street has similar conditions.



Proposed upgrades to the intersection include "Pedestrian Crossing" signs approximately 200 feet in advance of the intersection in either direction. (See Figure 12: Willow Street Signage)

TRAIL ALIGNMENT UNDER INTERSTATE 280 AND ROUTE 87 RAMPS

South of the Caltrans parking lot, the trail passes under Interstate 280 (Bridge #37-0275) and Highway 87 (GR-1 Ramp) overhead ramps. The trail alignment has been carefully planned to avoid impacts to the existing columns (GR 5 Bent 14, GD 3 Bent 9) and roadway facilities while allowing adequate vertical clearance for emergency, maintenance vehicle, horse patrol and trail users. The minimum vertical clearance preferred by the Water District for maintenance vehicle passage is 13'-6", however, under certain conditions lesser clearances are permissible. The City of San Jose's standard is 14' of clearance to permit horse-mounted police patrols to travel along the trail. Final project vertical clearances will be determined during design development. A safety barrier and fence are proposed to separate trail users from the at-grade Route 87 off ramp near the trail alignment.

Detailed review of the trail alignment / sections by Caltrans Division of Structures will be required at the next project phase. (See Figure 13: Trail Sections Under I-280)

INTEGRATION WITH ON-GOING VTA, CALTRANS, AND SCVWD LANDSCAPE PROJECTS

The Valley Transportation Authority (VTA) is planning landscaping improvements between Virginia Street and the south side of Willow Street. Coordination is on-going between these two projects at the Master Plan phase to ensure a unified image of riparian woodland restoration and expansion along the trail corridor near along the top of the highway embankment while incorporating the requirements of the highway planting along the lower elevations of the slope next to the highway.

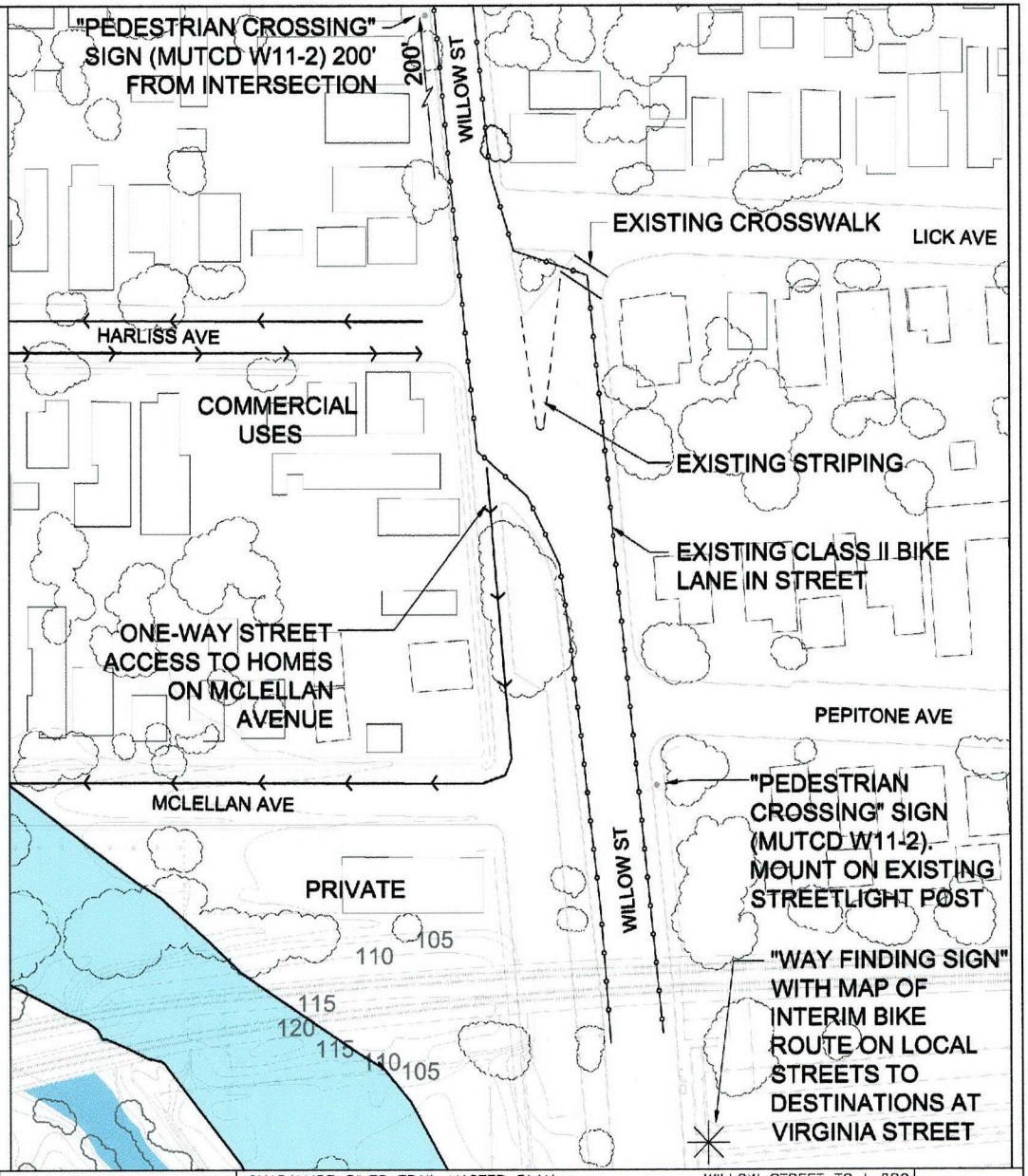
The SCVWD is implementing riparian woodland mitigation planting in conjunction with the flood control project. The trail design will consider and incorporate as appropriate the requirements of present and future SCVWD projects.

Landscaping proposed in the trail corridor will be coordinated with present and planned VTA and Caltrans landscape projects at the Design Development and Construction Drawing Phases of the project. Areas for landscape treatment will include patch and match replanting where new landscaping has been installed by others, but will not include landscape mitigation improvements. Landscape design opportunities in the Highway 280 "maze" area will be determined during design development.

Table 3. Recommended Planting List for Riparian Woodland, Barrier Planting, Areas and Shaded Riverine Habitat

Common Name	Scientific Name	Average Spacing	Number of Plants for 10,500 sq. ft. (0.24acre)
Riparian Plantings			
Blue Elderberry	*Sambucus mexicana*	8' o.c.	32
Valley Oak	*Quercus lobata*	8' o.c.	32
Western Sycamore	*Platanus racemosa*	8' o.c.	32
California Rose	*Rosa californica*	8' o.c.	32
Toyon	*Heteromeles arbutifolia*	8' o.c.	32
Coffee Berry	*Rhamnus californica*	8' o.c.	32
Barrier Plantings			
California Rose	*Rosa californica*	8' o.c.	10
Coffee Berry	*Rhamnus californica*	8' o.c.	10
Coyote Brush	*Baccharis pilularis*	8' o.c.	5
Shaded Riverine Habitat (SRA Cover)			
Willow	*Salix sp.*	5' o.c.	5
Fremont Cottonwood	*Populus fremontii*	5' o.c.	5

W11-2: PEDESTRIAN CROSSING



TY LIN INTERNATIONAL / CCS
engineers | planners | scientists

THE PLANNING COLLABORATIVE
331 JEFFERSON STREET OAKLAND CA 94607 TEL 510 444 0488 FAX 510 444 0489
JEFFREY A GROTE, AICP, ASLA CA. LIC. 3403 TPCPLANNINGCOLLABORATIVE.COM

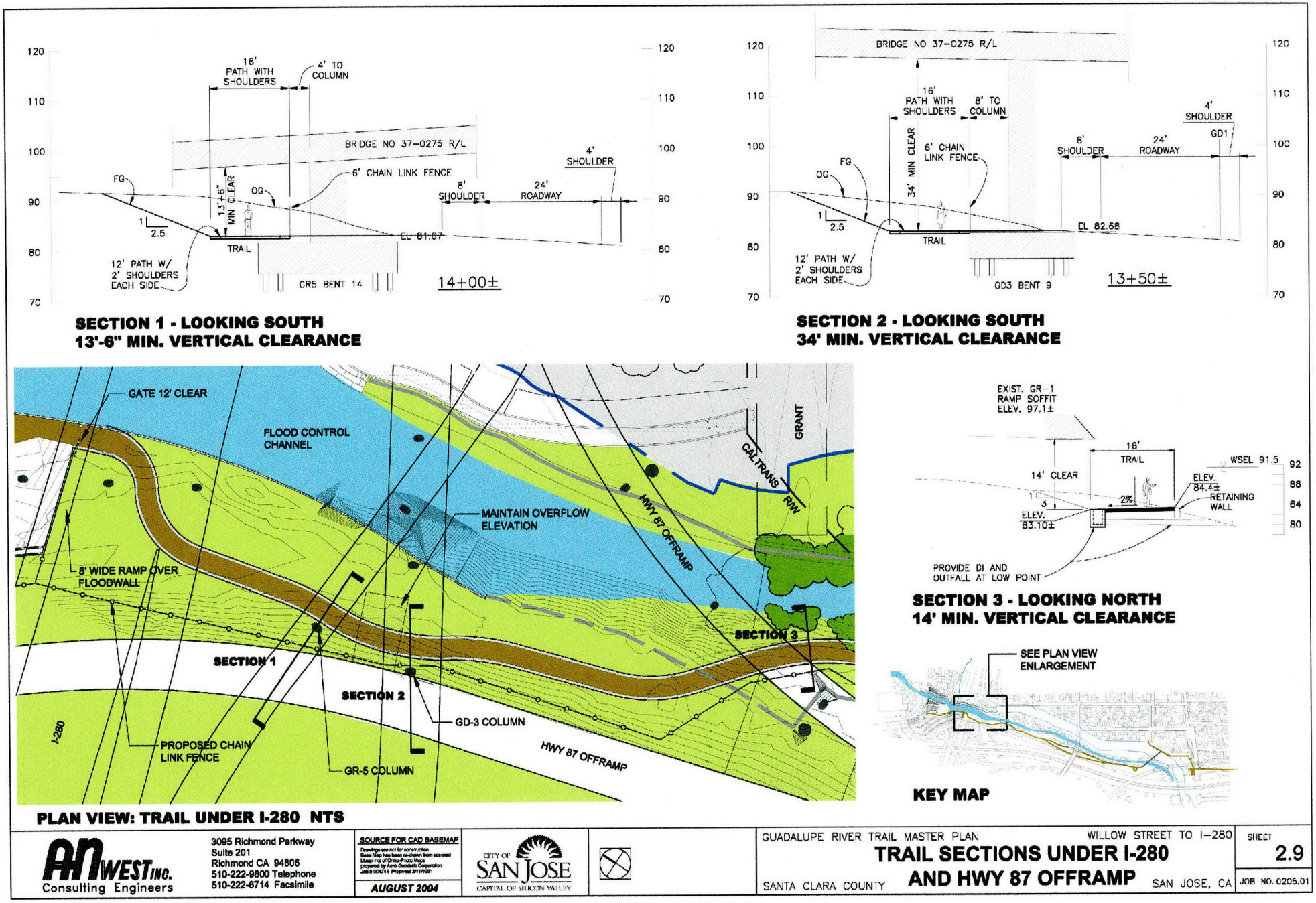
SOURCE FOR CAD BASEMAP
Enlarings are not for construction
Base Map has been re-drawn from scanned blueprints of Ortho-Photo Maps prepared by Aero Geodetic Corporation Job # 604749 Prepared 3/11/1991
AUGUST 2004

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

GUADALUPE RIVER TRAIL MASTER PLAN
WILLOW STREET TO I-280
WILLOW STREET SIGNAGE
SANTA CLARA COUNTY
SAN JOSE, CA

SHEET 2.8
JOB NO. 0205.01

Figure 12: Willow Street/Signage



AN WEST INC. Consulting Engineers
3095 Richmond Parkway
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510-222-9800 Telephone
510-222-6714 Facsimile

SOURCE FOR CAD BASEMAP
AUGUST 2004

CITY OF SAN JOSE CAPITAL OF SILICON VALLEY

GUADALUPE RIVER TRAIL MASTER PLAN
WILLOW STREET TO I-280
TRAIL SECTIONS UNDER I-280 AND HWY 87 OFFRAMP
SANTA CLARA COUNTY
SAN JOSE, CA

SHEET 2.9
JOB NO. 0205.01

Figure 13: Trail Sections Under I-280

Trail Design Plan Issues: Woz Way To Virginia Street

Trail design plan and technical design issues will be refined in design development for Phase 1 to follow the Master Plan.

PROPOSED TRAIL ALIGNMENT ALONG CALTRANS PARKING LOT

At the northern project limit, the proposed trail connects to the existing Guadalupe River Trail located adjacent to the Caltrans parking lot just south of Woz Way. The most feasible proposed trail connection to the existing trail will be along the eastern edge of the parking lot. Some modifications to the parking lot will be required, including re-striping of portions of the lot and the removal or relocation of existing bollards and lighting installed by SCVWD. To accommodate the trail improvements, 10 to 12 parking spaces are estimated to be removed. This proposal has been coordinated through the participation of the Redevelopment Agency and Caltrans in the TAC meetings. (See Figure 18: Proposed Trail Alignment at the Caltrans Parking Lot)

TRAIL ALIGNMENT AT U.S. ARMY CORPS OF ENGINEERS FLOOD TRAINING WALL "G"

The final flood control project envisions a system of flood walls and levees to contain the design flood. In the interim, flood "training walls" will be installed to provide temporary flood protection by guiding out of bank, north moving, flood waters back to the main channel of the Guadalupe River to protect areas north of Interstate 280 without inducing flooding. Once all flood protection improvements are implemented, these "training walls" will be modified or removed.

Several "training walls" are planned for the area in the vicinity of the Highway 280 "maze"; however, Flood Wall "G" lies in the path of the trail. To be constructed by USACOE along the southern edge of the Caltrans parking lot, perpendicular to the river, Flood Training Wall "G" will require a gate (and possibly a ramp over the wall). (See Figure 18: Proposed Trail Alignment at the Caltrans Parking Lot) Until then, a gate is proposed for maintenance and emergency vehicles to pass through. This gate will be opened and closed based on SCVWD requirements. Signage describing the necessity of the flood walls and dates of operation is recommended at this location. Access to the trail will be restricted during high water events by use of the gate and posted signage.

The proposed gate will be three feet high, thirteen feet long, and a custom steel fabrication with water-tight seals between the gate and flood wall. Properly designed and specified, it will be capable of being moved on an as-needed basis. Heavy-duty hardware will be provided so the gate can be locked in either the open or closed position. Removable bollards will be installed in conjunction with the gate so that when the gate is open, unauthorized vehicles cannot access the trail.

Design plan issues associated with the trail from this point south to Virginia Street, are discussed under Trail Elevation in Relationship to Flood Control.

AT-GRADE TRAIL CROSSING AT VIRGINIA STREET

The proposed trail alignment meets Virginia Street an at-grade trail crossing west. This trail juncture with Virginia Street allows for emergency and maintenance access as well as trail access by the neighborhood and commuters from the Virginia Street LRT station west of the trail on Virginia Street. A field review by the project traffic consultant of this location revealed the following:

1. The posted speed limit is 25 mph
2. The observed speeds along Virginia Street were approximately 25 to 30 mph.
3. Virginia Street is a 2-lane minor arterial / collector roadway.
4. Traffic on Virginia Street appears to be a low volume.
5. A slight vertical curve exists on Virginia Street between Harliss Avenue and the Guadalupe River bridge approach. The crest of the curve is located within 100 feet west of Harliss Avenue. The location for the proposed crossing appears to have adequate sight distance for the observed speeds.
6. On the Guadalupe River Bridge, access to the VTA LRT station is provided for, and it was observed that a number of pedestrians were crossing mid-block on the bridge.
7. Streetlights exist at the trail crossing. Compliance with pedestrian level standards should be verified.
8. According to the VTA bike stress level criteria, a low to medium stress level street has posted speeds below 35 mph and has curb lane with 22 feet widths. Virginia Street has similar conditions.

The master plan calls for several safety enhancement measures. To control trail traffic, painted stop bars and post-mounted stop signs will be installed. Below the stop signs, "Cross Traffic Does Not Stop" signs will be mounted. Along the public roadway, "Pedestrian Crossing" warning signs will be installed at 200 feet in advance of the crossing. At the time of construction, DOT will assess trail and roadway safety and will determine final traffic control measures. Removable bollards will be installed in conjunction with the entrance to the trail so that unauthorized vehicles cannot access the trail.

Gateway structures will be installed at both the north and south entry points to draw attention to the trail. (See Figure 14: Proposed Trail Over and Undercrossing at Virginia Street)

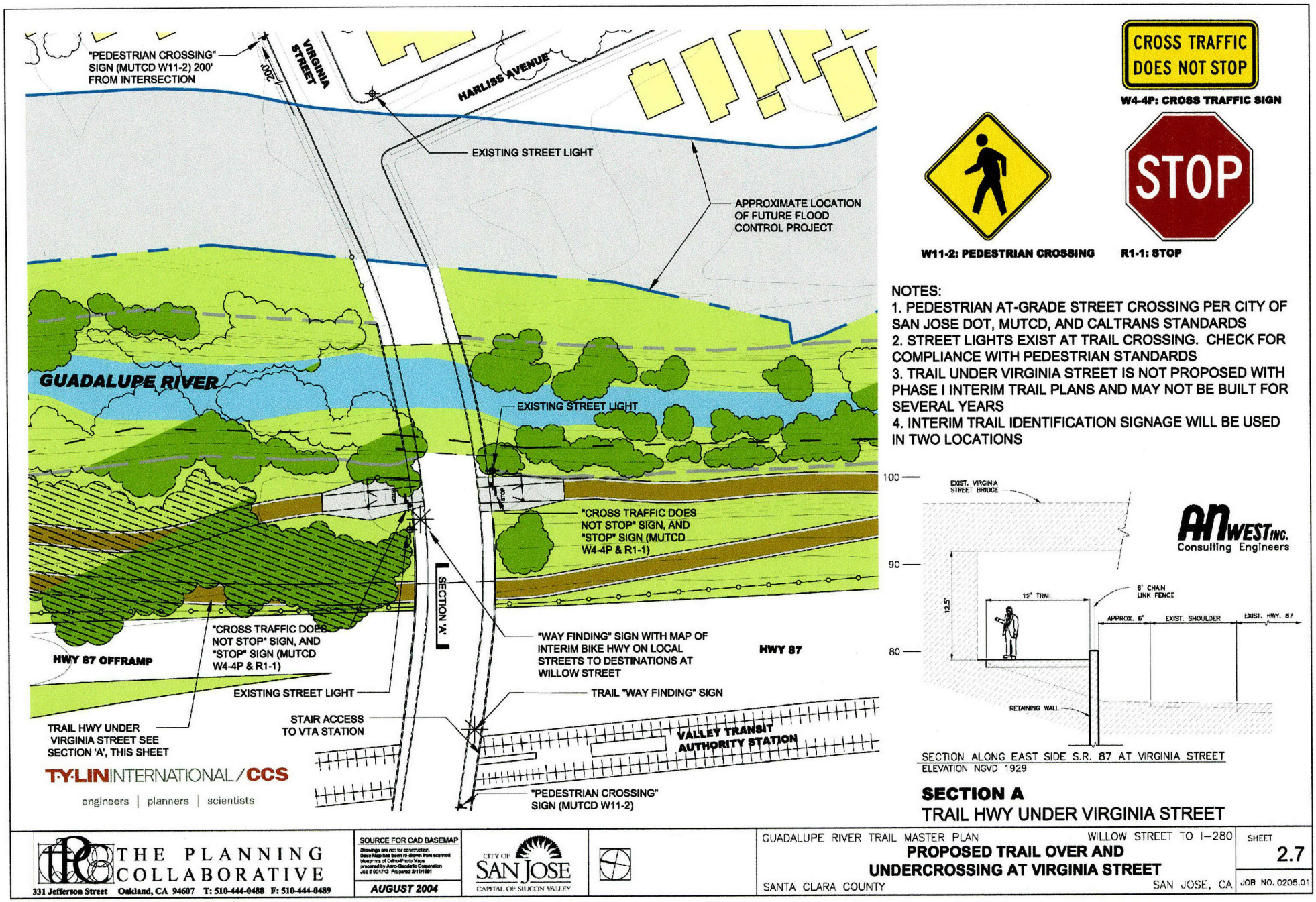


Figure 14: Proposed Trail At-Grade and Undercrossing at Virginia Street

Trail Design Plan Issues: Virginia Street to Willow Street Bridge

Trail design plan and technical design issues will be refined in design development for Phase 2.

TRAIL UNDERCROSSING AT VIRGINIA STREET

In response to input received at community meetings, a trail undercrossing at Virginia Street along the eastern abutment of the Virginia Street Bridge over Highway 87 is proposed. The trail undercrossing will ramp down at 5% maximum to underneath the bridge. Under the bridge, the 12 ft. wide trail will be approximately 5' above the adjacent Highway 87 shoulder and is supported by a retaining wall. The minimum vertical clearance will be 12.5 feet and is less than the Water District and City guidelines. The limitations of this site do not permit greater clearance therefore signage will be included that precludes service vehicle access and provides advance notice of the reduced height. A six ft. black vinyl coated chain link fence, per Caltrans and VTA requirements, will be located between Highway 87 and the trail. (See Figure 14: Proposed Trail At-Grade and Undercrossing at Virginia Street)

PEDESTRIAN / BIKE BRIDGE OVER GUADALUPE RIVER AND FUTURE SCVWD CHANNEL

To gain access to the west side of the river, a pedestrian / bicycle bridge is proposed to cross both the natural river and future channel at McLellan Avenue. The bridge will have two spans, approximately 180-feet each. The bridge soffit will be a minimum of 3-feet above the 100-year water level. The abutments would be pile-supported and include wing walls perpendicular to the superstructure. The center support will be a single column, approximately 4 feet in diameter. The center support will be located on the narrow piece of land separating the natural river and the man-made channel and will be designed to withstand major flooding events and significant riverbank erosion. It could be built on either a pile-supported square footing or a cast-in drilled hole shaft. The bridge is aligned to avoid encroachment on JPB right-of-way.

The elevation of the bridge landing on the east side of the channel will be approximately 6 feet above the existing grade requiring ramps (at 5% gradient) for trail access. Coinciding with the bridge landing, a pocket park on the east side of the channel will be considered independent of this master plan.

RESIDUAL LAND

Near the proposed staging area on Old Willow Street, the SCVWD will acquire several residential single-family properties east of the Guadalupe River and portions of the McLellan Avenue right of way to construct the flood control channel. As part of the flood control channel project, Edwards Street and McLellan Avenue will be re-connected as a two-way street. Residual land area not used by the channel project presents an opportunity to create trail supporting uses (i.e. park, parking, interpretive site) on nearly one-quarter acre. To minimize impacts to existing residences along McLellan Avenue, the proposed road is aligned to buffer the back of existing residences.

STAGING AREA PARKING AT OLD WILLOW STREET

The community requested that the trail not impact existing neighborhood on-street parking. To meet the needs of the trail users and local residents, reserved staging area parking for 6 cars is proposed to be constructed within the Old Willow Street corridor near McLellan Avenue. The existing broken asphalt defined by the Old Willow Street corridor will be reconfigured as a landscape trail corridor including the northern landing of the proposed future Willow Street Bridge. The partially enclosed walkway under the railroad bridge should be entirely closed off to avoid public use. To meet the City's dimensional requirements for head in parking, Old Willow Street would have to be expanded four feet to the south to accommodate six head-in parking spaces. A retaining wall edge will be required at the parking stall edge. (See Figure 9: Proposed Trail Plan)

PEDESTRIAN / BICYCLE BRIDGE OVER WILLOW STREET

The proposed Willow Street Bridge will allow crossing of Willow Street independent of vehicular traffic. Existing embankment conditions on the north side of the street do not permit an at-grade trail crossing.

The bridge will be used by pedestrians, bicycles, and possibly mounted patrols. The superstructure will be a single span bow truss structure, 119 feet in length, and will have clear roadway widths of 12 feet. The minimum vertical clearance above Willow Street is 16.5 feet. Within the Old Willow Street right of way, the north end of the bridge will have a switchback arrangement of ramps to bring the trail down to grade. A circular ramp system was not used due to the potential of unsafe conditions caused by fast-moving bikes and skateboards. (See Figure 16: Pedestrian/Bike Bridge at Willow Street)

The Willow Street Bridge will be aesthetically pleasing with good visibility from the roadway. Combined with the Old Willow Street trail corridor landscaping, a proposed trail staging area, and potential public art, this area will serve as a "gateway" for the trail and the Willow Street Neighborhood Business District (NBD) located to the east.

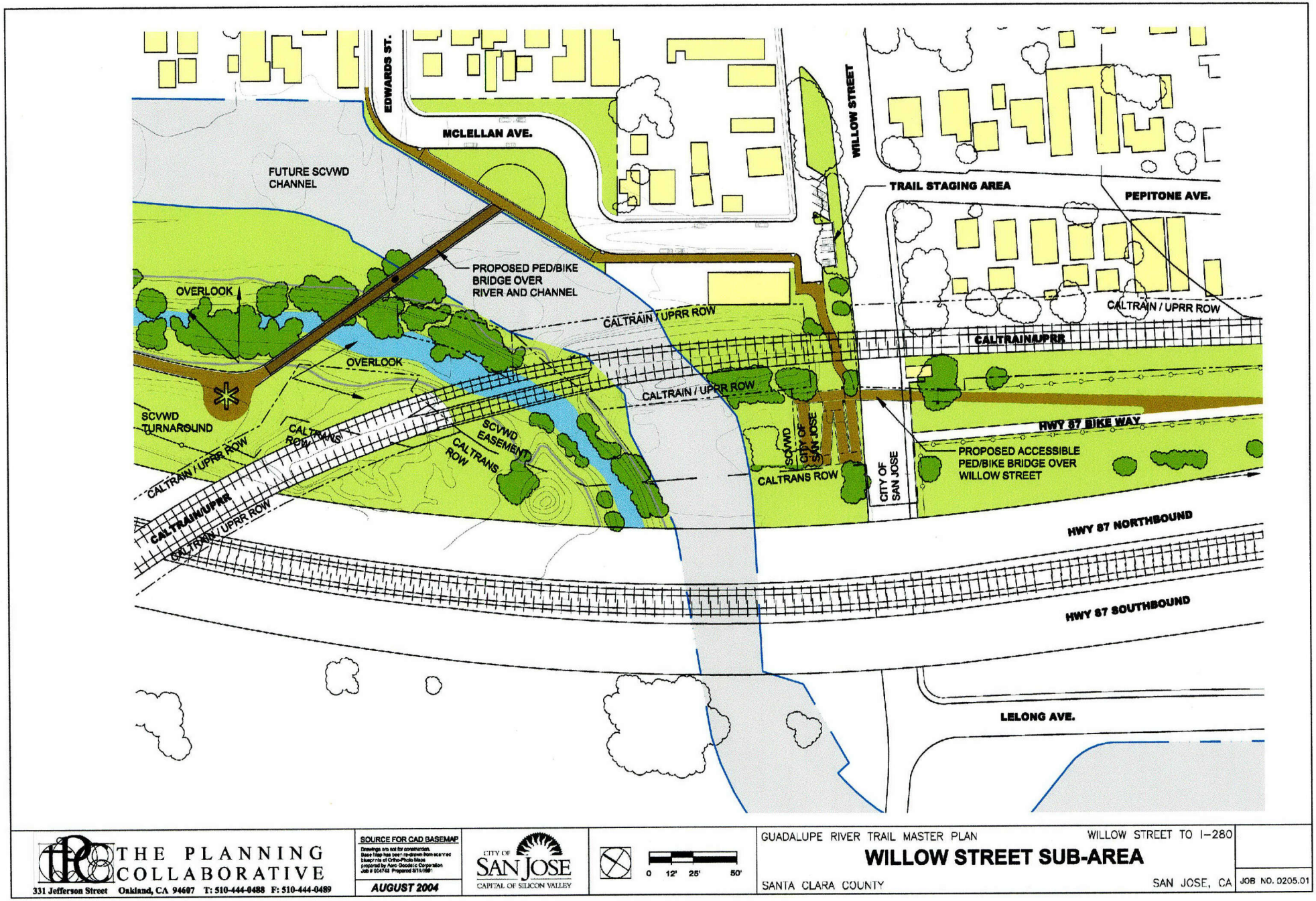
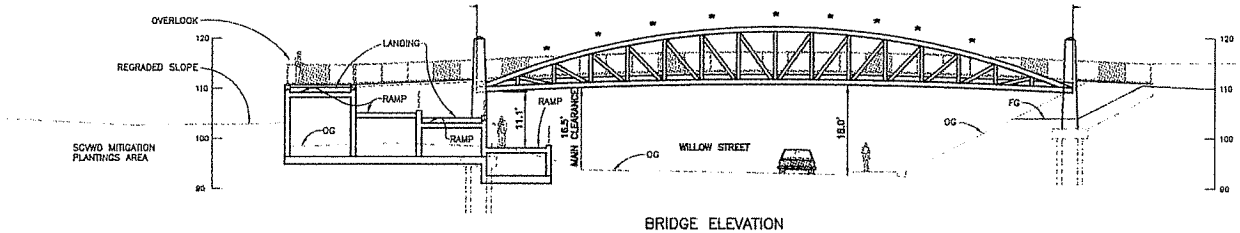


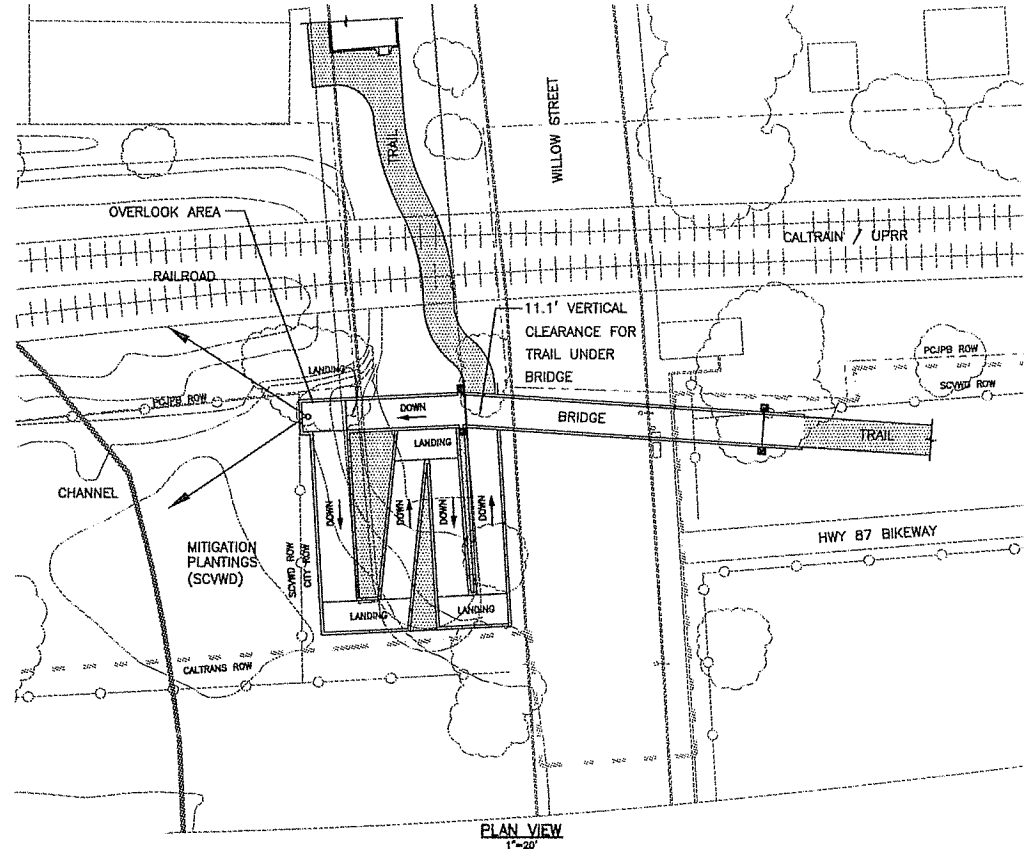
Figure 15: Willow Street Sub Area



BRIDGE ELEVATION
WILLOW STREET OVERPASS
1"=10'

BRIDGE DESIGN NOTES:

1. BOW TRUSS STRUCTURE
2. 119' BRIDGE LENGTH
3. 12' CLEAR PATHWAY WIDTH
4. 11.1' MINIMUM VERTICAL CLEARANCE ABOVE TRAIL AT ONE LOCATION
5. 16.5' MINIMUM VERTICAL CLEARANCE ABOVE WILLOW STREET
6. BRIDGE DESIGN AND MATERIALS TO BE LIGHT, AIRY AND AESTHETICALLY PLEASING
7. POTENTIAL LOCATION FOR PUBLIC ART
8. RAMP DESIGNED TO BE WITHIN CITY PROPERTY
9. SOUTHERN BRIDGE ABUTMENT WILL ENCROACH ONTO CALTRANS ROW.
10. RAMPING AT 5% MAX MEETS ADA REQUIREMENTS
11. SOME REGRADING OF SCVWD PROPERTY MAY BE NECESSARY



PLAN VIEW
1"=20'

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AUGUST 2004

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

GUADALUPE RIVER TRAIL MASTER PLAN
WILLOW STREET TO I-280
PEDESTRIAN / BIKE BRIDGE AT WILLOW ST.
SANTA CLARA COUNTY
SAN JOSE, CA

SHEET 2.6
JOB NO 0205.01

Figure 16: Pedestrian/Bike Bridge at Willow Street

ESTIMATE OF PROBABLE CONSTRUCTION COST

	Items	Unit Price	Unit	Outside Caltrans R/W		Inside Caltrans R/W		Total	
				Quant	Amount	Quant	Amount	Quant	Amount
	PHASE I - WOZ WAY TO ACROSS VIRGINIA STREET								
1	Miscellaneous Removal	10,000.00	LS	-	$ -	1	$ 10,000	1	$ 10,000
2	Pavement Marking	5.00	SF	50	$ 250	1,200	$ 6,000	1,250	$ 6,250
3	Hard Trail	60.00	LF	-	$ -	1,720	$ 103,200	1,720	$ 103,200
4	Type A1 Curb	20.00	LF	-	$ -	50	$ 1,000	50	$ 1,000
5	Sidewalk & Driveway	10.00	SF	-	$ -	1,740	$ 17,400	1,740	$ 17,400
6	Raised Concrete Band	30.00	LF	-	$ -	170	$ 5,100	170	$ 5,100
7	Grading	30.00	CY		$ -	3,000	$ 90,000	3,000	$ 90,000
8	Open Cell Cellular Concrete Mat	100.00	SY	-	$ -	90	$ 9,000	90	$ 9,000
9	CCM Keyway	250.00	CY	-	$ -	15	$ 3,750	15	$ 3,750
10	Concrete Trail	210.00	CY	-	$ -	27	$ 5,670	27	$ 5,670
11	Retaining Wall H = 4 Feet	300.00	LF	-	$ -	110	$ 33,000	110	$ 33,000
12	Retaining Wall H = 6 Feet	450.00	LF	-	$ -	110	$ 49,500	110	$ 49,500
13	Retaining Wall H = 8 Feet	650.00	LF	-	$ -	40	$ 26,000	40	$ 26,000
14	Sheetpile Wall	10.00	SF	-	$ -	320	$ 3,200	320	$ 3,200
15	Post and Rail Fence	30.00	LF	-	$ -	260	$ 7,800	140	$ 7,800
16	6 Foot Chain Link Fence	30.00	LF		$ -	1,700	$ 51,000	1,700	$ 51,000
17	Chain Link Gate	1,500.00	EA	-	$ -	2	$ 3,000	2	$ 3,000
18	Flood Gate	5,000.00	EA	-	$ -	1	$ 5,000	1	$ 5,000
19	12" RCP	48.00	LF	-	$ -	350	$ 16,800	350	$ 16,800
20	Standard Flat Grate Inlet	1,200.00	EA	-	$ -	4	$ 4,800	4	$ 4,800
21	Storm drain outfall and connections	6,500.00	EA	-	$ -	2	$ 13,000	2	$ 13,000
22	Signage, On-Trail	5,000.00	EA	-	$ -	2	$ 10,000	2	$ 10,000
23	Sign, On-Street Guide Signs	350.00	EA	3	$ 1,050	3	$ 1,050	6	$ 2,100
24	Landscape & Irrigation	250,000.00	LS	-	$ -	1	$ 250,000	1	$ 250,000
			Phase 1 Subtotal		**$ 1,300**		**$ 725,270**		**$ 726,570**
			contingency (15%)		$ 195		$ 108,791		$ 108,986
	PHASE 1 WOZ WAY TO ACROSS VIRGINIA STREET BASE TOTAL =				**$ 1,495**		**$ 834,061**		**$ 835,556**
	ESTIMATED PROBABLE COST RANGE AT 10-15 % =				**$1,645 - $1,719**		**$917,467 - $959,170**		**$919,111 - $960,889**

NOTES: 1. PUBLIC ART ELEMENT COST IS NOT INCLUDED
2. CONTINGENCY SET BY CITY OF SAN JOSE

NOTE FOR TABLE: The table above presents Master Plan Level Estimates of Probable Costs with general cost categories. Unit prices were based on those available by February 27, 2004. Various specific cost items are included in general categories; for example, gateway elements and off-site mitigation planting, are included in Item, Landscape Irrigation. Some costs, such as SWPPP, mobilization, traffic control & lighting, and unit price increases would be reflected in the escalation increase provided for final project costs of 10 to 15% over the next year.

	Items	Unit Price	Unit	Outside Caltrans R/W		Inside Caltrans R/W		Total	
				Quant	Amount	Quant	Amount	Quant	Amount
PHASE 2.1 - ROUTE UNDER VIRGINIA STREET									
25	Hard Trail	60.00	LF	-	$ -	690	$ 41,400	690	$ 41,400
26	Grading	30.00	CY	-	$ -	2,600	$ 78,000	2,600	$ 78,000
27	Open Cell Cellular Concrete Mat	100.00	SY	-	$ -	90	$ 9,000	90	$ 9,000
28	CCM Keyway	250.00	CY	-	$ -	15	$ 3,750	15	$ 3,750
29	Concrete Trail	210.00	CY	-	$ -	27	$ 5,670	27	$ 5,670
30	Mechanically Stabilized Embankment Retaining	100.00	SF	-	$ -	640	$ 64,000	640	$ 64,000
31	Retaining Wall H = 6 Feet	450.00	LF	-	$ -	40	$ 18,000	40	$ 18,000
32	6 Foot Chain Link Fence	30.00	LF	-	$ -	720	$ 21,600	720	$ 21,600
			Phase 2.1 Subtotal		**$ -**		**$ 241,420**		**$ 241,420**
PHASE 2.2 - VIRGINIA STREET TO ACROSS WILLOW									
33	Miscellaneous Removal	10,000.00	LS	1	$ 10,000	-	$ -	1	$ 10,000
34	Pavement Marking	5.00	SF	30	$ 150	-	$ -	30	$ 150
35	Excavation	15.00	CY	200	$ 3,000	200	$ 3,000	400	$ 6,000
36	Embankment	20.00	CY	1,600	$ 32,000	1,330	$ 26,600	2,930	$ 58,600
37	Retaining Wall H = 4 Feet	300.00	LF	450	$ 135,000	-	$ -	450	$ 135,000
38	Retaining Wall H = 6 Feet	450.00	LF	60	$ 27,000	-	$ -	60	$ 27,000
39	Type A1 Curb	20.00	LF	170	$ 3,400	-	$ -	170	$ 3,400
40	A. C. Paving (Parking Lot & Willow St.)	5.00	SF	2,700	$ 13,500	-	$ -	2,700	$ 13,500
41	Sidewalk & Driveway	10.00	SF	400	$ 4,000	140	$ 1,400	540	$ 5,400
42	5' Hard trail	30.00	LF	40	$ 1,200	-	$ -	40	$ 1,200
43	8' Hard trail	40.00	LF	360	$ 14,400	-	$ -	360	$ 14,400
44	Hard trail	60.00	LF	550	$ 33,000	970	$ 58,200	1,520	$ 91,200
45	6 Foot Chain Link Fence	30.00	LF	60	$ 1,800	400	$ 12,000	460	$ 13,800
46	Chain Link Gate	1,500.00	EA	-	$ -	1	$ 1,500	1	$ 1,500
47	12" RCP	48.00	LF	300	$ 14,400	100	$ 4,800	400	$ 19,200
48	Standard hooded inlet	3,000.00	Ea	1	$ 3,000	-	$ -	1	$ 3,000
49	Standard Flat Grate Inlet	1,200.00	Ea	3	$ 3,600	1	$ 1,200	4	$ 4,800
50	Storm drain outfall	6,500.00	Ea	-	$ -	1	$ 6,500	1	$ 6,500
51	Sign, Creekside Trail Designation	5,000.00	EA	1	$ 5,000	-	$ -	1	$ 5,000
52	Sign, On Street Guide Signs	350.00	EA	3	$ 1,050	1	$ 350	4	$ 1,400
53	Landscape and Irrigation	543,000.00	LS	0.56	$ 304,080	0.44	$ 238,920	1	$ 543,000
			Phase 2.2 Subtotal		**$ 609,580**		**$ 354,470**		**$ 964,050**

NOTE FOR TABLE: The table above presents Master Plan Level Estimates of Probable Costs with general cost categories. Unit prices were based on those available by February 27, 2004. Various specific cost items are included in general categories; for example, gateway elements and off-site mitigation planting, are included in Item, Landscape Irrigation. Some costs, such as SWPPP, mobilization, traffic control & lighting, and unit price increases would be reflected in the escalation increase provided for final project costs of 10 to 15% over the next year.

	Items	Unit Price	Unit	Outside Caltrans R/W		Inside Caltrans R/W		Total	
				Quant	Amount	Quant	Amount	Quant	Amount
PHASE 2.3 - GUADALUPE RIVER BRIDGE									
54	Cofferdam & dewatering	40,000.00	LS	1	$ 40,000	-	$ -	1	$ 40,000
55	Furnish piles	22.00	LF	480	$ 10,560	-	$ -	480	$ 10,560
56	Drive piles	1,300.00	EA	12	$ 15,600	-	$ -	12	$ 15,600
57	48" Cast-In-Drilled-Hole Concrete Piling	400.00	LF	60	$ 24,000	-	$ -	60	$ 24,000
58	Structure excavation	40.00	CY	80	$ 3,200	-	$ -	80	$ 3,200
59	Structure backfill	30.00	CY	340	$ 10,200	-	$ -	340	$ 10,200
60	Structure concrete	500.00	CY	300	$ 150,000	-	$ -	300	$ 150,000
61	Deck concrete	400.00	CY	75	$ 30,000	-	$ -	75	$ 30,000
62	Bar reinforcing steel	0.90	LB	35,000	$ 31,500	-	$ -	35,000	$ 31,500
63	Superstructure (in place, both spans)	580,000.00	LS	1	$ 580,000	-	$ -	1	$ 580,000
64	12' Hard trail	50.00	LF	240	$ 12,000	-	$ -	240	$ 12,000
65	Guardrailing	40.00	LF	1,100	$ 44,000	-	$ -	1,100	$ 44,000
			Phase 2.3 Subtotal		**$ 951,060**		**$ -**		**$ 951,060**
PHASE 2.4 - WILLOW STREET BRIDGE - ALTERNATIVE 1									
66	Furnish piles	22.00	LF	160	$ 3,520	160	$ 3,520	320	$ 7,040
67	Drive piles	1,300.00	EA	4	$ 5,200	4	$ 5,200	8	$ 10,400
68	Structure excavation	40.00	CY	925	$ 37,000	14	$ 560	939	$ 37,560
69	Structure backfill	30.00	CY	2,035	$ 61,050	31	$ 930	2,066	$ 61,980
70	Excavation	20.00	CY	-	$ -	-	$ -	-	$ -
71	Embankment	20.00	CY	1,300	$ 26,000	-	$ -	1,300	$ 26,000
72	Structure concrete	500.00	CY	503	$ 251,500	27	$ 13,500	530	$ 265,000
73	Deck concrete	400.00	CY	23	$ 9,200	7	$ 2,800	30	$ 12,000
74	Bar reinforcing steel	0.90	LB	68,500	$ 61,650	8,000	$ 7,200	76,500	$ 68,850
75	Superstructure (in place)	220,000.00	LS	1	$ 169,400	0	$ 50,600	1	$ 220,000
76	Asphalt concrete approach ramp	60.00	LF	340	$ 20,400	-	$ -	340	$ 20,400
77	12' Hard trail	50.00	LF	400	$ 20,000	-	$ -	400	$ 20,000
78	Guardrailing	40.00	LF	946	$ 37,840	86	$ 3,440	1,032	$ 41,280
			Phase 2.4 Subtotal		**$ 702,760**		**$ 87,750**		**$ 790,510**
			Phase 2 Subtotal		$ 2,269,900		$ 677,140		$ 2,947,040
			contingency (15%)		$ 340,485		$ 101,571		$ 442,056
	PHASE 2 VIRGINIA STREET TO ACROSS WILLOW STREET BASE TOTAL =				**$ 2,610,385**		**$ 778,711**		**$ 3,389,096**
	BASE TOTAL PHASE 1 & 2 =				**$ 2,611,880**		**$ 1,612,772**		**$ 4,224,652**
	ESTIMATED PROBABLE COST RANGE AT 10-15 % =				**$2,873,068 - $3,003,662**		**$1,774,049 - $1,854,687**		**$4,647,117 - $4,858,349**

NOTES: *1. PUBLIC ART ELEMENT COST IS NOT INCLUDED*
2. CONTINGENCY SET BY CITY OF SAN JOSE

NOTE FOR TABLE: The table above presents Master Plan Level Estimates of Probable Costs with general cost categories. Unit prices were based on those available by February 27, 2004. Various specific cost items are included in general categories; for example, gateway elements and off-site mitigation planting, are included in Item, Landscape Irrigation. Some costs, such as SWPPP, mobilization, traffic control & lighting, and unit price increases would be reflected in the escalation increase provided for final project costs of 10 to 15% over the next year.

Chapter 4
Trail Standards & Guidelines

Introduction

Trail Safety Design Standards, Landscape Guidelines, and Conceptual Signage Guidelines for the project are described below. Designing detailed trail elements will take place at the Design Development phase. This section is meant to provide guidance during the next phase of work.

Trail Personal Safety Design Standards

The proposed trail will pass through areas that do not permit a high level of surveillance of the trail user. The challenge is to mitigate the surveillance level with design features that will enhance safety of the trail. Design features that generate a high level of use will serve as a deterrent to undesirable activities.

The Master Plan describes the elements and alignment of an attractive river trail. Through development of an aesthetic project, it is anticipated that safety will be increased by attracting many trail users who become the "eyes on the trail". This approach is considered the first step in discouraging anti-social and criminal behavior and encouraging normal public access and behavior[1]. Increasing the number of users tends to increase the overall sense of security.

SIGNAGE

Appropriately integrated trail signage design improves the genuine and perceived safety of a trail. Examples include posting trail name signs and "way-finding" orientation map signs at trail entrances and directional signs with safety tips along the trail. Signage enhances the ability of a trail user to react and take appropriate steps to seek alternate routes if they feel less safe.

[1] Draft Trail Safety Standards/Design (in progress working paper), San José Police Department

TRAIL DESIGN SAFETY BUFFERS

Trail users need an adequate "reaction zone" that is a visible and physical distance to observe and react to potential threats. These zones should provide for the following:

1. A 10' to 15' buffer on either side of the trail;
2. Maximum height of ground cover 3';
3. Minimum tree limb height 7' above ground to lowest limb; and
4. Dense vegetation is cleared at least 5' back from a trail's edge. Where these guidelines are limited by site conditions; use of railing/fencing can improve reaction zones.

VISIBILITY

In addition to the visibility provided by buffer zones, trail users should have a minimum forward and rear visibility of 100' in both directions on a level grade. Site distances are particularly important at approaches to trail entrances/exits, bridges, underpasses, intersections, and tunnels (a user should be able to see through a tunnel or underpass before entering). Trail planning should avoid corridors that become enclosed by vegetation, walls, and backs of buildings or other barriers that might create a "box canyon" effect.

SURVEILLANCE

The ability of law enforcement officers and the public to observe trail corridors from areas adjacent to the trails or from nearby roadways is an important component of trail safety. Surveillance from a Police car is limited to trails that can be observed from adjacent streets. Police bicycle, motorcycle or horse patrol can be utilized to extend police surveillance operations however identifying funding resources for these services may be necessary.

EMERGENCY CALL BOXES

Call boxes generally are located at intervals based on the unique circumstances of the trail. Length, alignment, proximity to development and other impacts guide the decision making process. Often, call boxes will be installed at trail heads. Each installation should be designed and located in cooperation with local law enforcement. If cellular activated call boxes are used, the system will require pre-placement testing to ensure functionality.

LIGHTING

Trail lighting is inconsistent with riparian corridor policies and therefore is not proposed along most of the alignment. However, lighting may be feasible along portions of the trail that follow the parking lot accessed from Woz Way. These improvements would augment lighting from adjacent streets and improve the visibility of areas where constraints limit the ability to provide other safety enhancements such as buffers and clear surveillance zones. Lighting should be provided under I-280 overpasses, Virginia Street underpass, and Willow Street pedestrian bridge and approach.

EMERGENCY ACCESS

Emergency vehicle (police, fire, and paramedic) access is important for longer trail systems where it is necessary for vehicles to drive along the trail to respond to trail user emergencies. The trail/maintenance road width will support emergency vehicles. Access control systems (bollards, gates, etc.) that allow for quick access by all departments will be installed.

MAINTENANCE

The sense of security and "ownership" for a trail user is enhanced by trail design and maintenance. Providing attractive, identifiable entrances and trailheads promotes usage and community ownership. Keeping trail improvements free of graffiti, trash and litter, animal waste, weedy overgrowth, and plant debris help guarantee that a well-designed trail facility will keep its luster over years of use.

Landscape Guidelines

GENERAL DESIGN THEMES

The project should use plantings to enhance the trail experience, improve the natural environment, provide shade and visual relief, screen undesirable views, buffer conflicting uses, increase aesthetic value, provide enhanced safety and security; all while maintaining the existing riparian habitat.

USE OF NATIVE PLANTS

The project emphasizes the use of native plants. Indigenous riparian woodland habitat for the Guadalupe River includes riparian oak and sycamore tree species.

Areas within the 100 ft. riparian corridor setback area are to be planted with native species grown from stock collected in the Guadalupe River watershed. In many cases, planting will be part of a mitigation or habitat restoration. Habitat restoration is governed by specific guidelines and requirements of City of San José, the SCVWD, and California Department of Fish and Game.

TRAIL GATEWAYS

Gateways that distinguish the trail form other trail segments are planned at the north and south entrances to the trail at neighborhood access points. An installation of gateway structures at the Virginia Street neighborhood access will draw the attention of passers-by to the trail. The latter installation may be planned as part of Phase 2.

Conceptual Signage Guidelines

GENERAL SIGN PHILOSOPHY

The Uniform Inter-Jurisdictional Trail Guidelines developed by the County of Santa Clara, should be considered in the final design plan for the trail improvements. A common goal will be to limit signs to those that:

1. Provide for enhanced safety of the trail user by communicating rules of usage;
2. Develop understanding of trail system by posting maps and directional information;
3. Protect the surrounding environment by discouraging disturbance of restoration sites; and
4. Enhance the trail and open space experience by providing interpretive information.

SIGN TYPES

Trail Entrance Signs. Signs that announce the trail should be visible from areas arterial roadways or parking facilities adjacent to trail heads. Trail entrance signs are placed at the entry point from the roadway or parking lot. Information presented on trail entrance signs can include:

1. Trail rules (complete list in English, selected primary rules in Spanish and Vietnamese);
2. Accessibility conditions and other ADA-related information if the trail has limited access areas;
3. Notice of the presence of restricted areas (private property, riparian areas) if trail is in close proximity; and
4. "Neighborhood Watch" and "Adopt-A-Trail" signs as appropriate.

To notify drivers of the presence of the trail, signs will be posted on roadways in advance of the trail head that indicate the name of the trail.

Trail Mile Markers and Directional Signs. Signs that provide information to the trail user about trail names, distances along the trail, and distances to points of interest will be installed. Mileage markers will be installed in coordination with the Police Department to support emergency response. The marker location will be photographed from two directions, and text indicating the path from arterial roadways for emergency vehicle access will be submitted to the Police Department's GIS Team.

Trail Regulatory Signs. The City's standard Trail Rules will be posted at the trailheads and along the alignment if reinforcement is required.

Interpretive and Protective Signs. Signs and/or benches will be posted that:

1. Encourage stewardship of the riparian environment;
2. Build understanding of flood control improvements ;
3. Explain natural resource points of interest; and
4. Explain sensitive riparian areas

Development and installation of the signs and benches will be coordinated with SCVWD staff.

Roadway Regulatory or Safety Signs. Signs will be posted that serve to notify drivers of a trail crossing at Virginia Street, Harliss Avenue and Willow Street. Development and installation of the signage will be coordinated with DOT staff and comply with Caltrans design standards.

Trail Entrance Bollards and In-Pavement Awareness Strips. Trail entrance bollards will be installed as per City guidelines. In-Pavement awareness strips will be installed per SCVWD guidelines

SIGN PLACEMENT

Specific location of signs should be determined in the field and should, where applicable, reference the following standards:

- California State Department of Transportation, Highway Design Manual (HDM); Chapter 1000—Bikeway Planning and Design; Topic 1004—Uniform Signs, Markings and Traffic Control Devices
- U.S. Department of Transportation, Federal Highway Administration, Office of Highway Safety. *Manual on Uniform Traffic Control Devices (MUTCD) for Streets and Highways*
- ADA Accessibility Guidelines

- City of San Jose Trail Design Guidelines (under development)

COYOTE WATERSHED AESTHETIC GUIDELINES, SCVWD, 2000, SIGNAGE

1. For major trail entrance signs, entrance bollards and use control signs, along with mile marker and direction sign guidelines, refer to the County of Santa Clara's *Uniform Inter-Jurisdictional Trail Design, Use and Management Guidelines*.
2. For property, boundary markers, announcing entry onto SCVWD lands, refer to the *SCVWD Engineering Policies & Procedures Manual.*
3. For use of the SCVWD logo, refer to the SCVWD Graphic Standards Manual. Signage within the watershed should provide clear orientation and safety information, and enhance the user's experience, without being obtrusive.

Other Functional and Aesthetic Requirements

RIPARIAN CORRIDOR POLICY STUDY, CITY OF SAN JOSÉ, 1999 GUIDELINES

Lighting. All trail corridors except within the Guadalupe River Park, do not have lighting (except for security lighting at bridge under crossings). Trails are typically adjacent to sensitive riparian areas where lighting could cause harm, and the posted rules indicate that trails are closed one hour after sunset.

Fences. Fences should be used only to protect important riparian areas from unauthorized public and domestic pet access.

Walls. Walls should not be used within or adjacent to the riparian corridor.

Signage. Signage should be installed at intervals required by the SCVWD in order to discourage disturbance of restoration sites.

Traffic Calming. For safety, where a trail crosses a street or street intersection, consideration should be given to street designs that incorporate traffic calming techniques including, but not limited to, roadway chokers.

Pavement Markings & Striping. A 4-inch wide (100 mm) yellow centerline stripe should be used along paved trails. Solid centerline stripes should be used on curves with restricted sight distances, and or where conditions make it less safe to pass.

Appendix

Enlarged Plans

Guadalupe River History

Bibliography

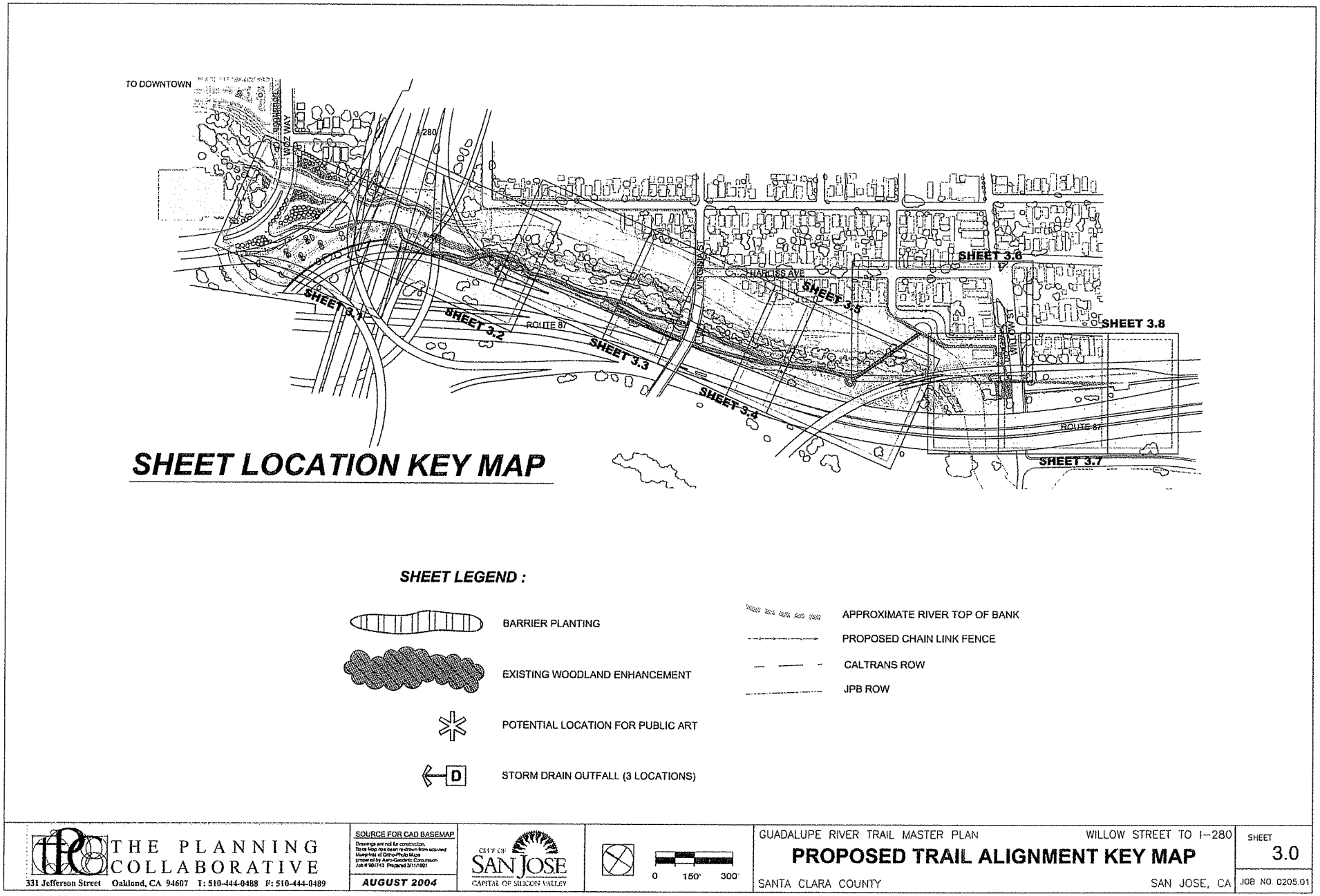


Figure 17: Proposed Trail Alignment Key Map

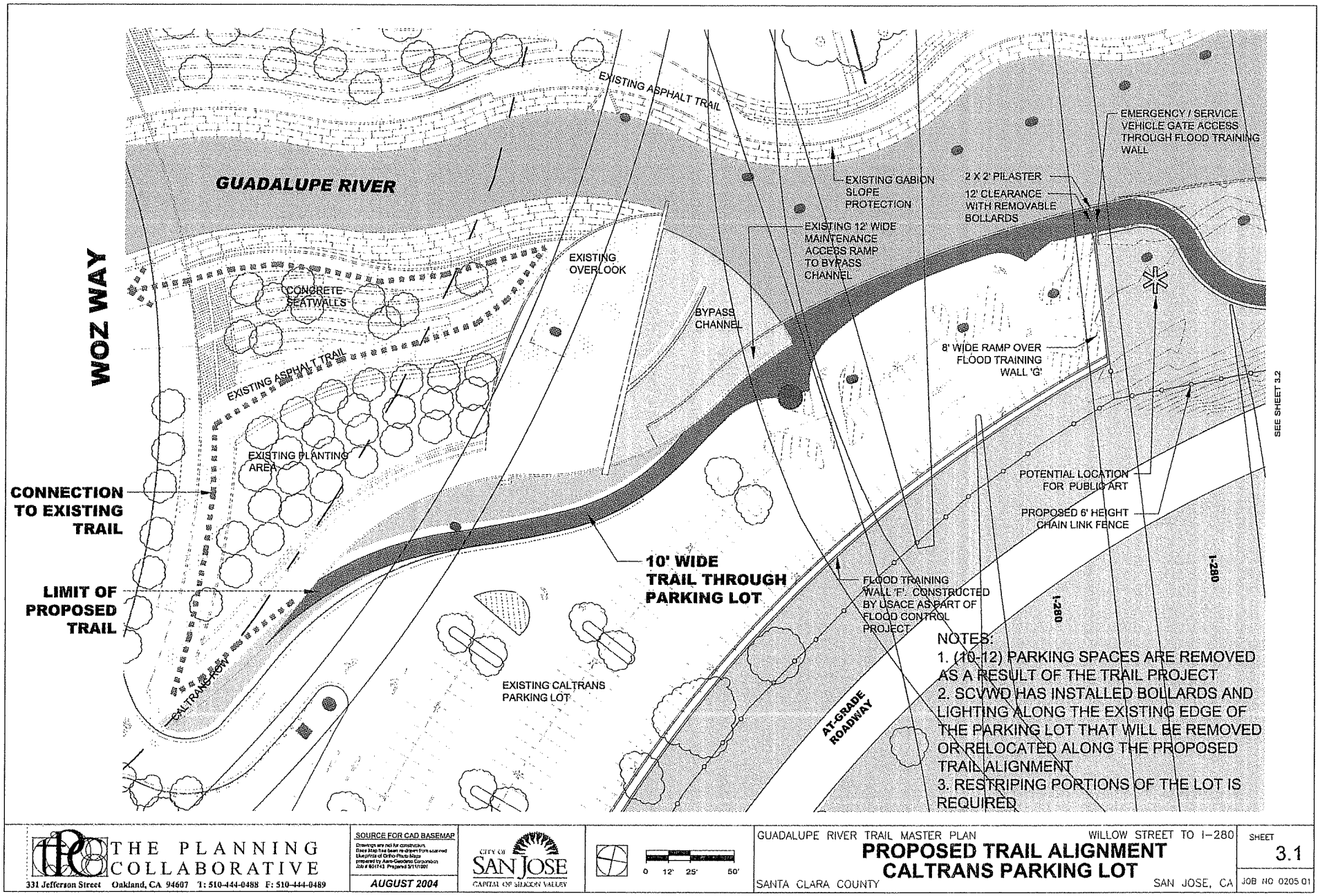


Figure 18: Proposed Trail Alignment- Caltrans Parking Lot

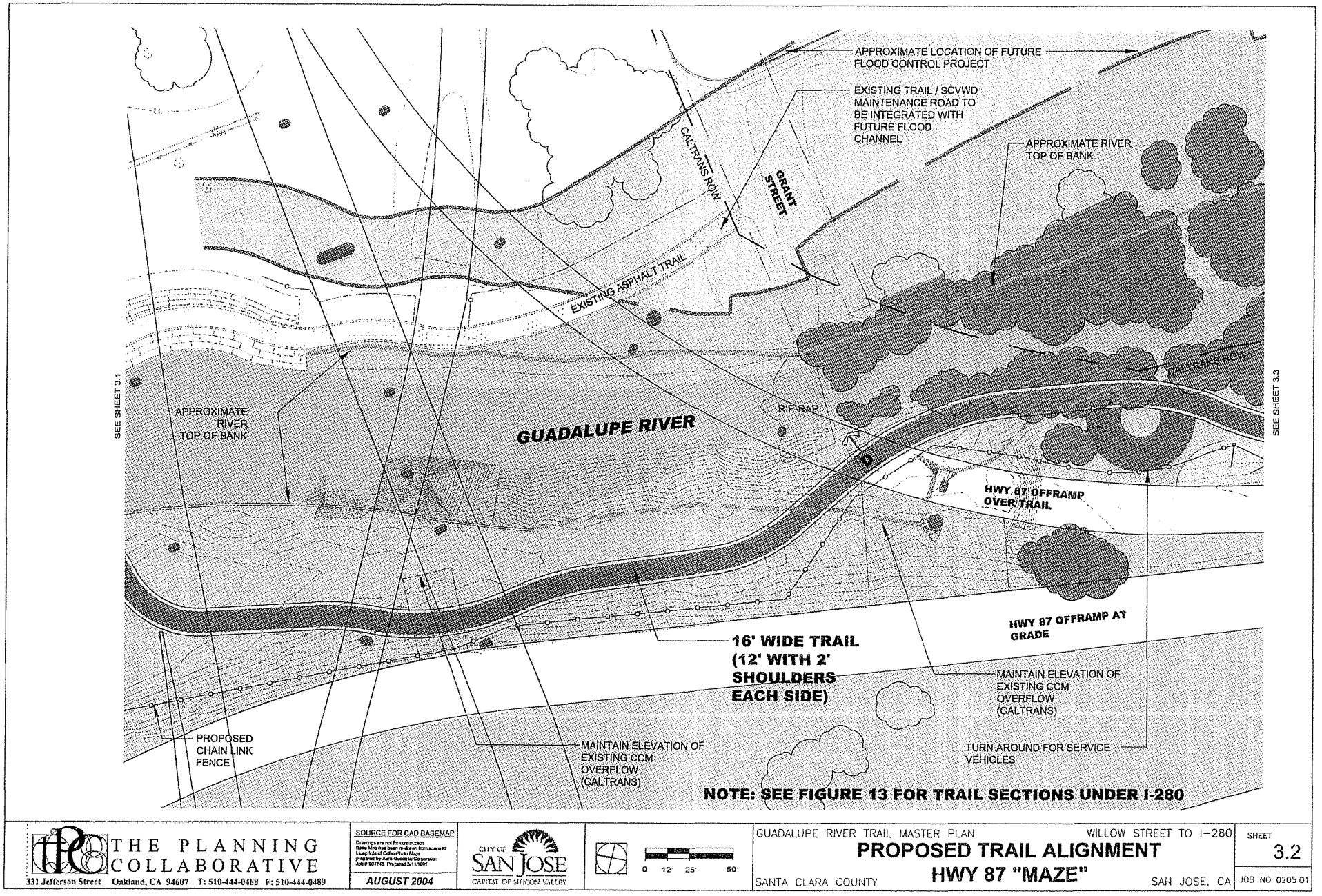


Figure 19: Proposed Trail Alignment

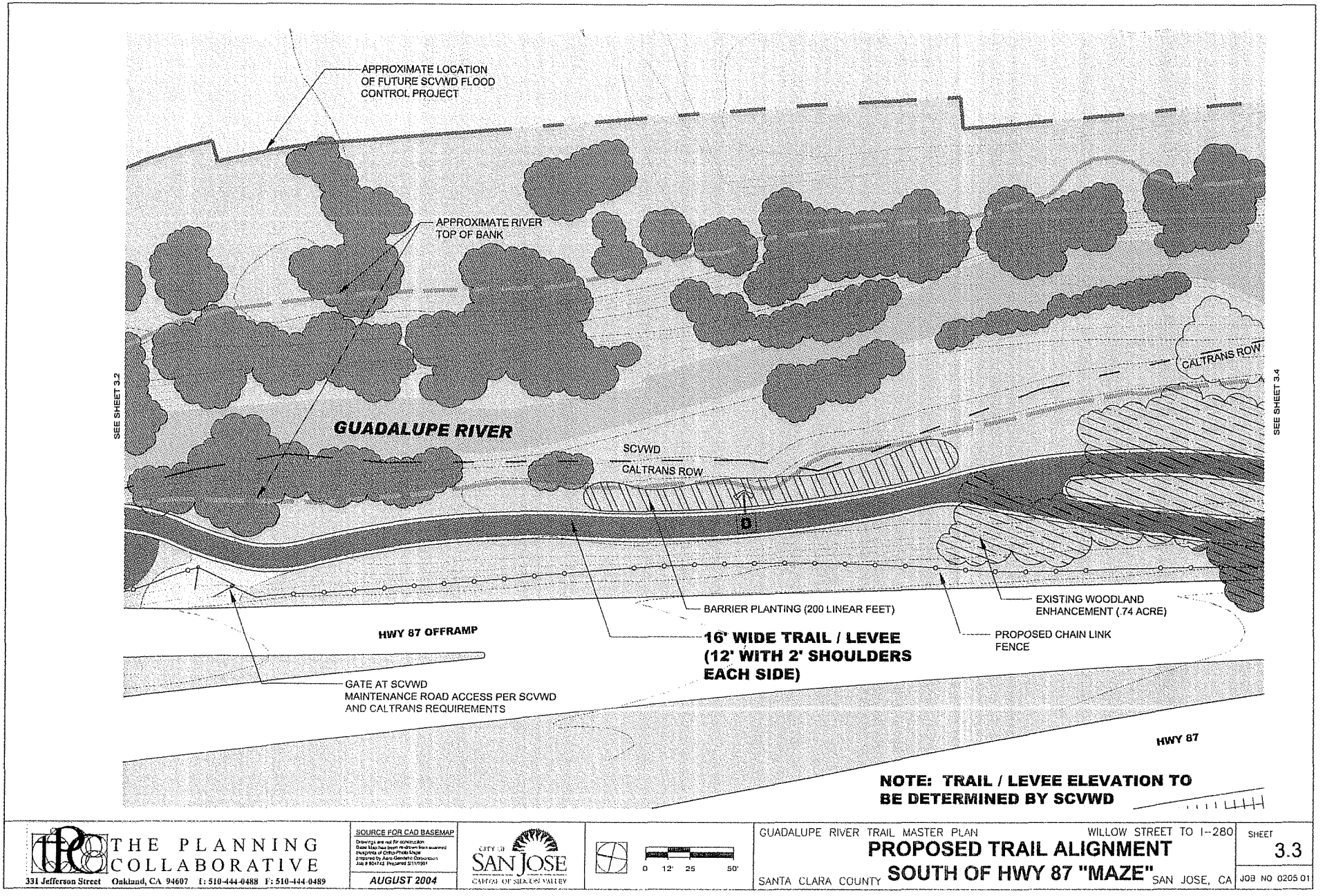


Figure 20: Proposed Trail Alignment

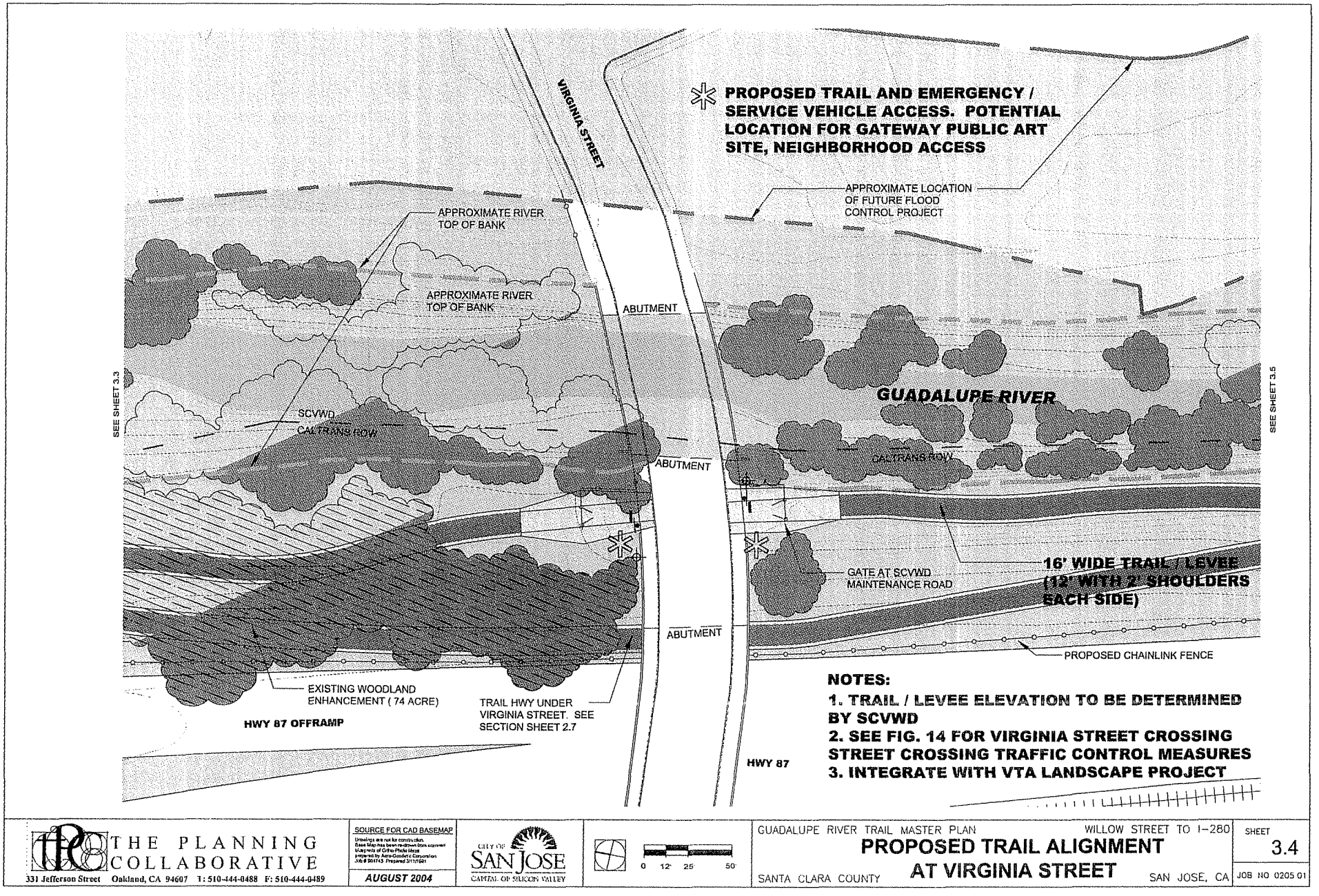


Figure 21: Proposed Trail Alignment

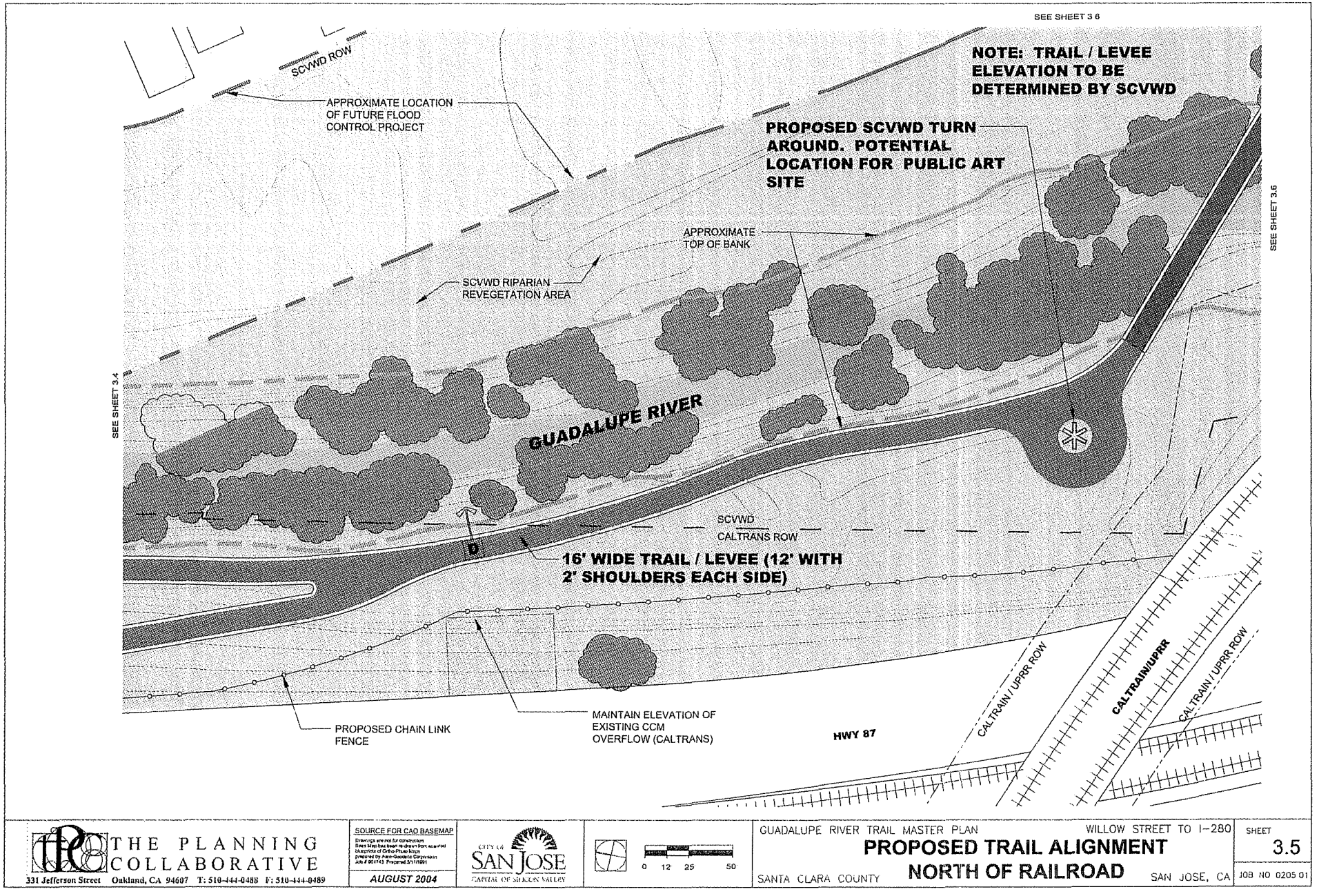


Figure 22: Proposed Trail Alignment

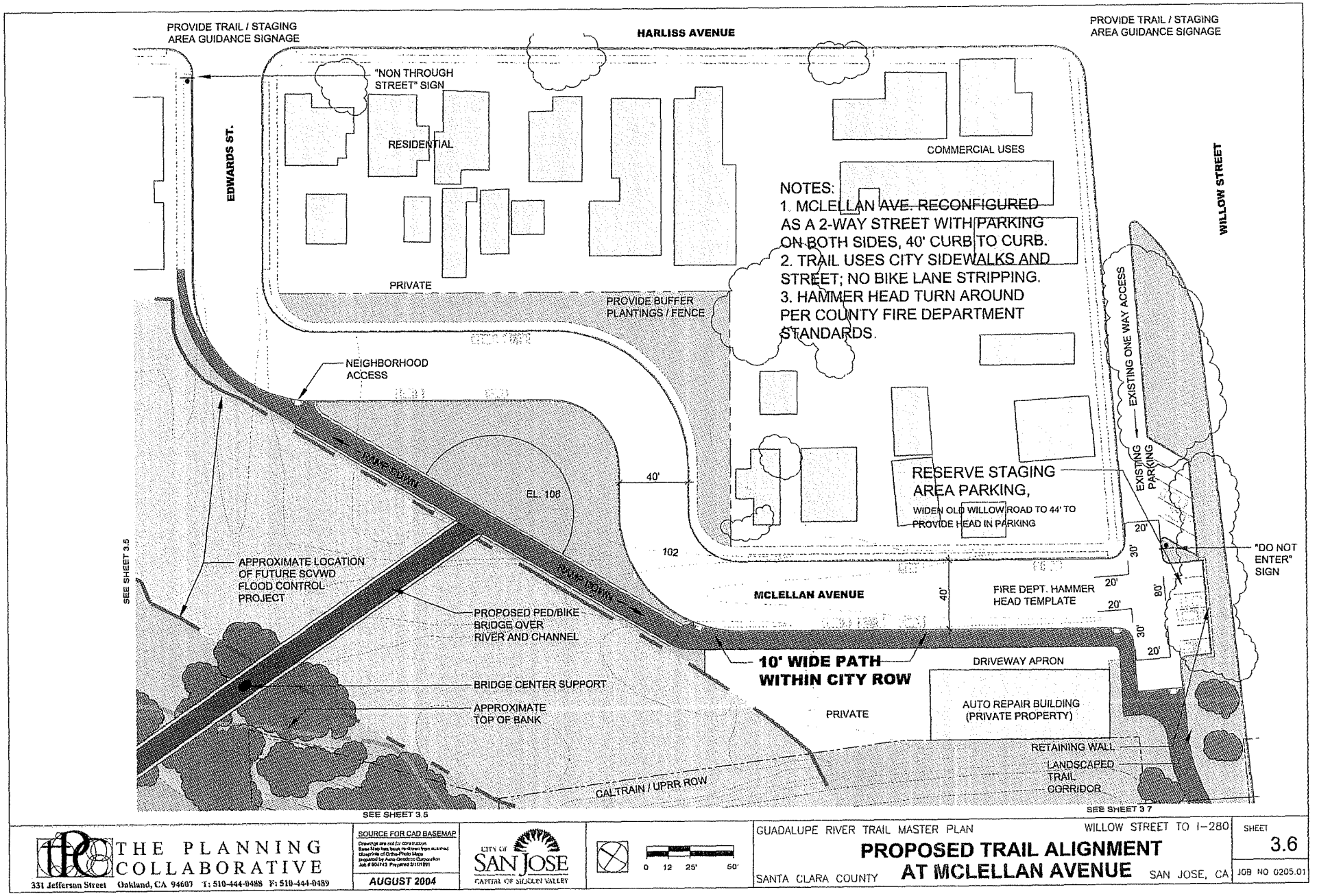


Figure 23: Proposed Trail Alignment at McClellan Street

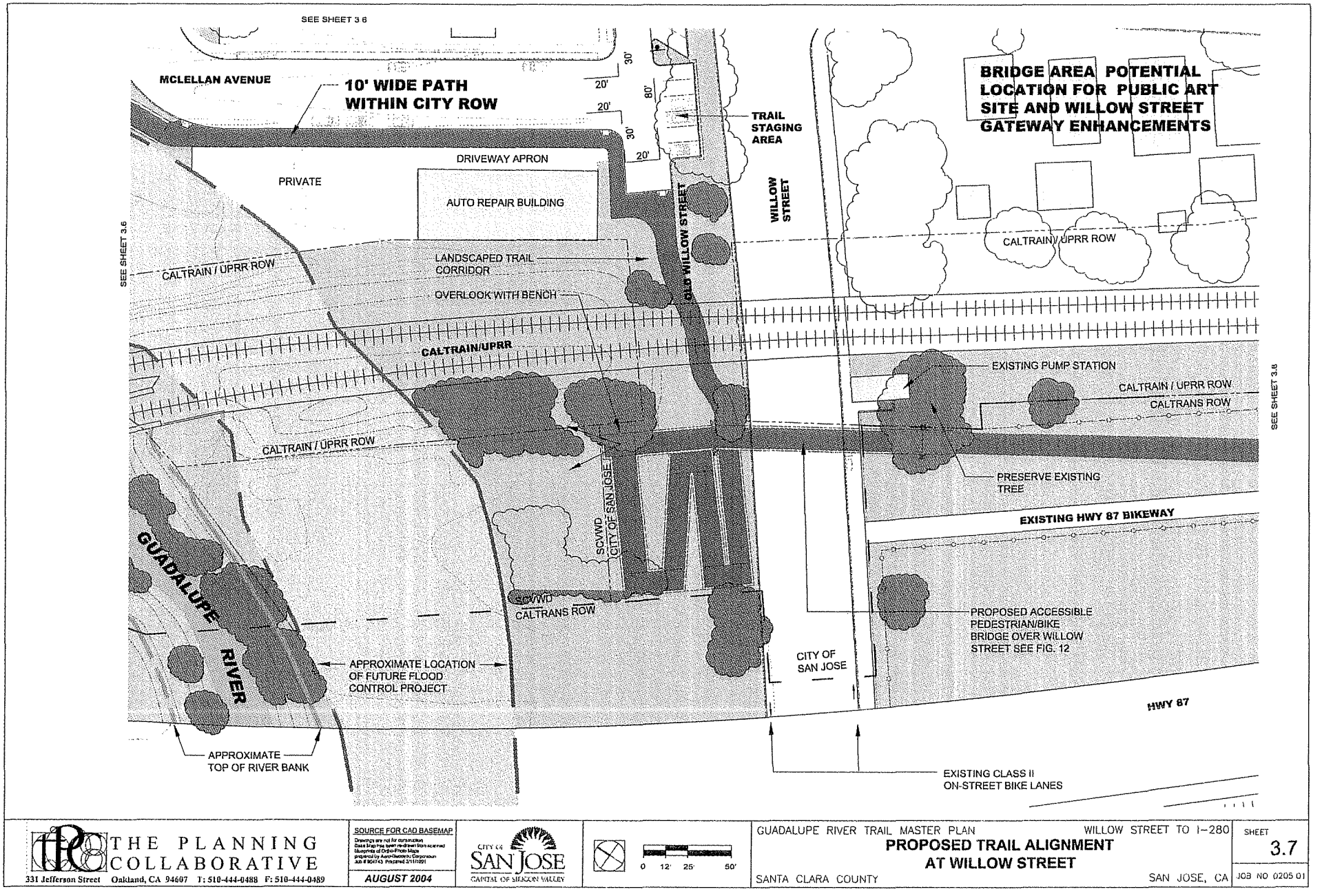


Figure 24: Proposed Trail Alignment at Willow Street

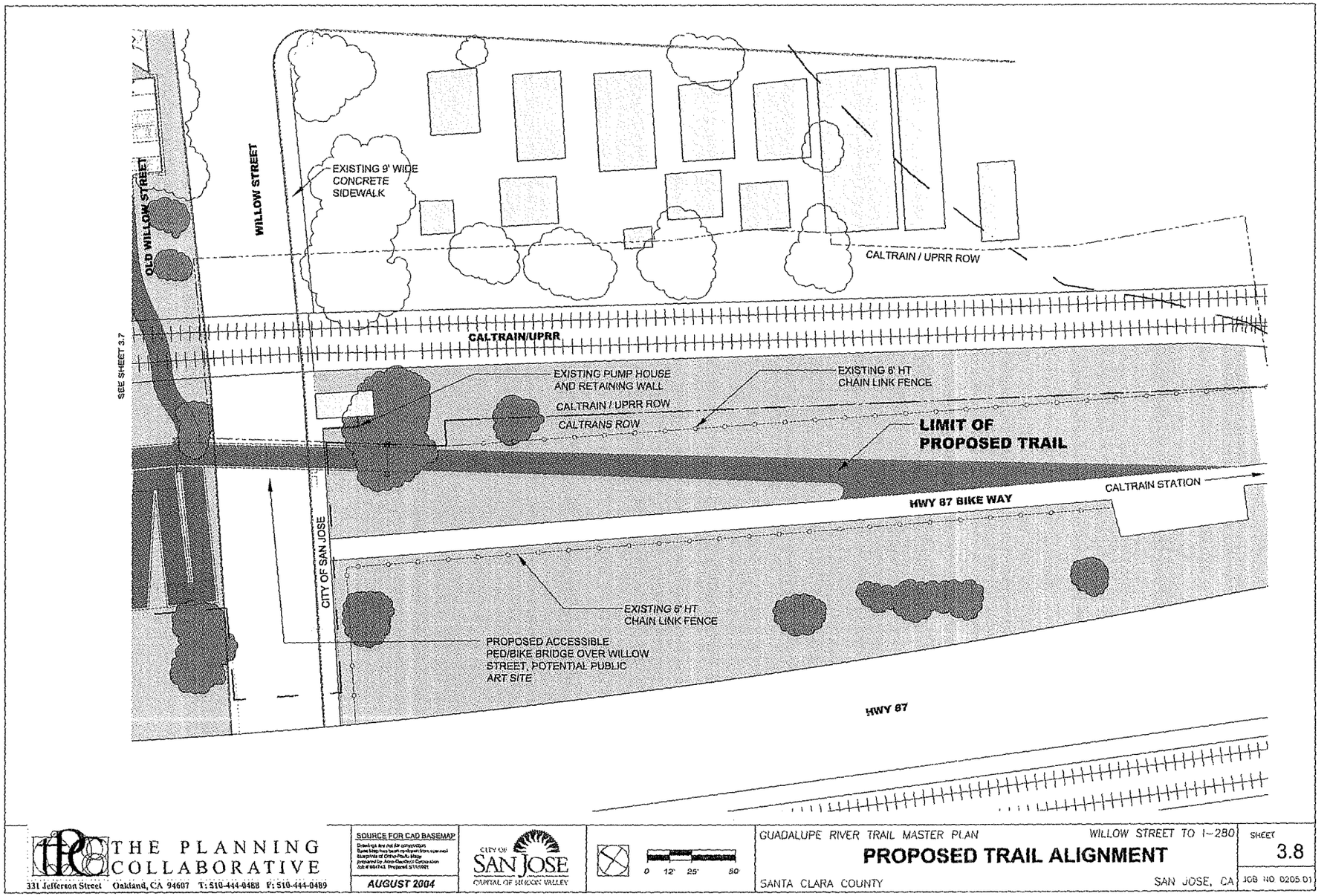
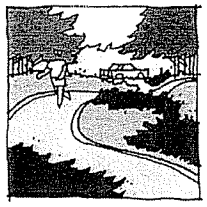


Figure 25: Proposed Trail Alignment at Willow Street



Guadalupe River History

The Guadalupe River plays an important role in San José's history. For thousands of years, several groups of Ohlone tribe lived near the river.

In 1777, El Pueblo de San José de Guadalupe became California's first civil settlement under Spanish rule. It was the first settlement not associated with a mission or a military post in Alta California. The town was founded as a farming community to provide food for the presidios of San Francisco and Monterey. Farming depended on the water and rich soil adjacent to the river.

On March 27, 1850, San José became the first incorporated city in the U.S. state of California. It also served as the first state capital with the first and second sessions of the California Legislature being held there in 1850 and 1851. For nearly two centuries a farming community supported by the waters of the Guadalupe River and Coyote Creek, San José produced a significant amount of fruits and vegetables until the 1960s.

In 1950, the city had a population of 95,000 and a total area of only 17 miles. An aggressive growth program by annexation through the 1960's and included Alviso, located at the northern terminus of the trail.

With the boom of the electronics industry, specifically personal computers and integrated circuits, San José continued growing through the last half of the 20th century. Development in North San José, within the Golden Triangle Area (bounded by 880, 101 and 237) resulted in many of the low rise commercial and housing developments along the Guadalupe River.

The Guadalupe River frequently floods San José's downtown and Alviso community, with severe flooding in 1862, 1895, 1911, 1955, 1958, 1963, 1969, 1982, 1986 and 1995.

Efforts to control the river begin in the early 1940's with a study authorized by the U.S. Army Corps of Engineers. In subsequent decades channel improvements and park development have made the river a centerpiece of the City's downtown and north San José neighborhoods. The flood protection efforts from 880 to 237 are planned for completion by December 2004.

In developing the flood control project, the Santa Clara Valley Water District has anticipated the desire for a recreational trail system. As a result, the levees have been designed with sufficient width and slopes to comply with County of Santa Clara and ADA guidelines respectively.

Prepared by Yves Zsutty, Program Manager, City of San José, Parks, Recreation & Neighborhood Services

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